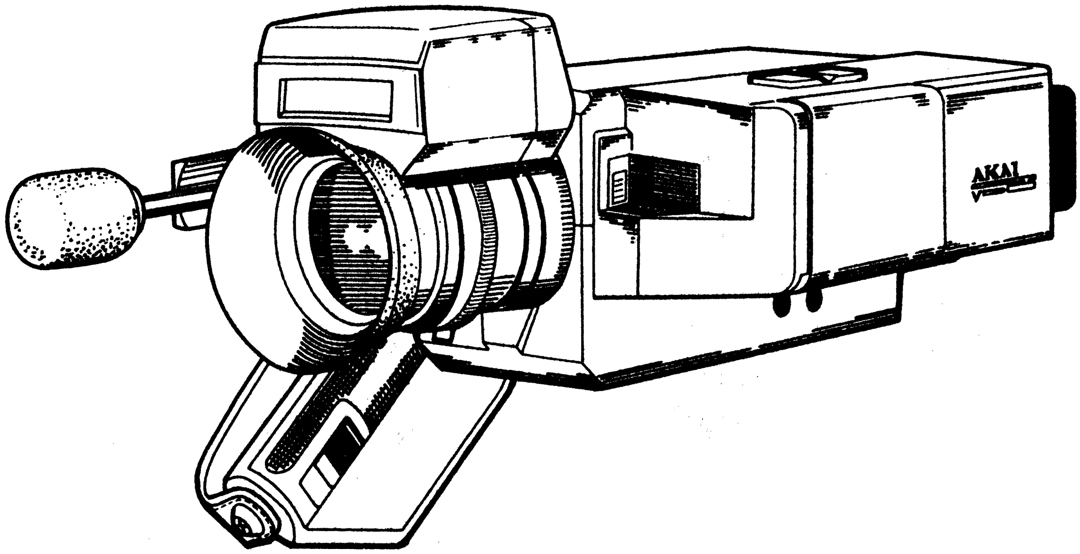
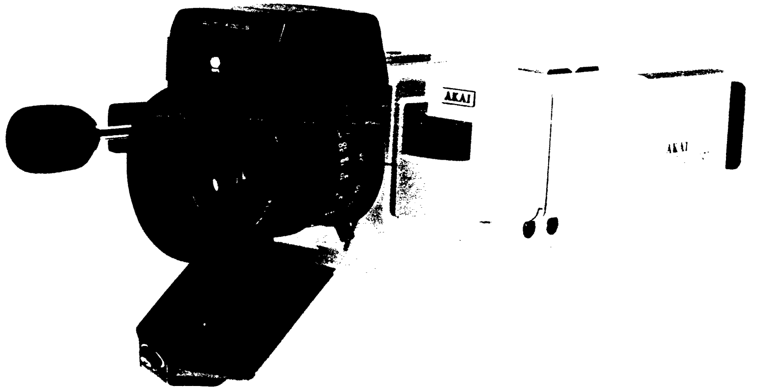
# AKAI SERVICE MANUAL




VC-X1U

COLOR VIDEO CAMERA (NTSC)

MODEL **VC-X1U**




COLOR VIDEO CAMERA (NTSC)

# MODEL VC-X1U

SECTION 1

# SERVICE MANUAL

TABLE OF CONTENTS

# I. SPECIFICATIONS

| | |
|---|---|
| PICKUP TUBE | Single tube, 2/3" vidicon |
| PICKUP SYSTEM | Uni-carrier Frequency Separation System |
| SCANNING SYSTEM | 2:1 interlaced (525 lines) |
| SIGNAL SYSTEM | NTSC Color System |
| HORIZONTAL RESOLUTION | More than 270 lines (center) |
| VIDEO S/N | More than 46 dB (luminance channel) |
| VIDEO OUTPUT | 1.0 Vp-p, 75 ohms (unbalanced) |
| SYNCHRONIZATION SYSTEM | Internal Synchronization System<br>(built-in Synchronization Signal Generator) |
| AUTOMATIC SENSITIVITY ADJUSTMENT RANGE | 50 lux to 64,000 lux (without built-in ND filter)<br>400 lux to 500,000 lux (with built-in ND filter) |
| COLOR TEMPERATURE AUTO<br>MANUAL | Incandescent lamp or Day light (automatically switchable)<br>Incandescent lamp, Fluorescence lamp and Day light (switchable) |
| MINIMUM PRACTICAL ILLUMINATION | More than 50 lux (F1.4) |
| MICROPHONE | Uni-directional electret condenser microphone |
| AUDIO OUTPUT | −20 dB (low impedance) |
| AUDIO S/N | More than 40 dB |
| EXTERNAL MICROPHONE INPUT | −66 dB, 2 kohms, 3.5 mmφ jack |
| LENS | F1.4, x6 zoom lens (f = 11 mm to 70 mm) with MACRO, Manual/2-speed motor driven Zooming control.<br>Switchable Auto/Manual IRIS control.<br>Filter Diameter = 58 mm (fixed zoom lens) |
| VIEW FINDER | 1.5" Electronic View Finder |
| REMOTE CONTROL JACK | 2.5 mmφ |
| SPECIAL FEATURES | One-touch fade-in and fade-out system<br>Switchable luminance and chrominance (color) signal polarities |
| OPERATING TEMPERATURE | 32°F to 104°F (0°C to 40°C)<br>* In cold temperatures, the auto zoom will move slowly. In such cases, zoom-in/-out manually. |
| POWER REQUIREMENT | 12 VDC |
| POWER CONSUMPTION | 7.6W (at Auto Focus "MANU." position)<br>11.0W (Maximum Power Consumption) |
| DIMENSIONS | 8.5(W) x 5.2(H) x 13.9(D) inches (216 x 132 x 352) mm<br>(With lens and eye hood, auto focus unit, hand grip and microphone retracted position) |
| WEIGHT | 5.3 lbs (2.5 kg)<br>(with lens and eye hood, hand grip and microphone) |

* For improvement purposes, specifications and design are subject to change without notice.

# II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

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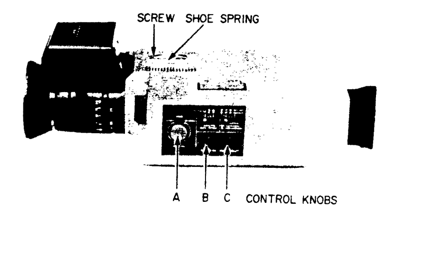


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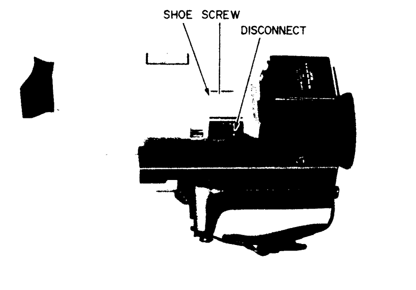


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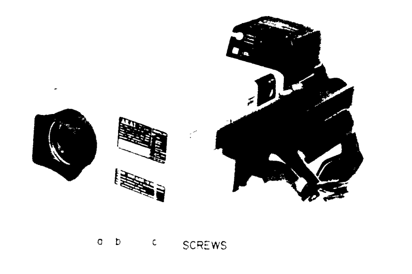


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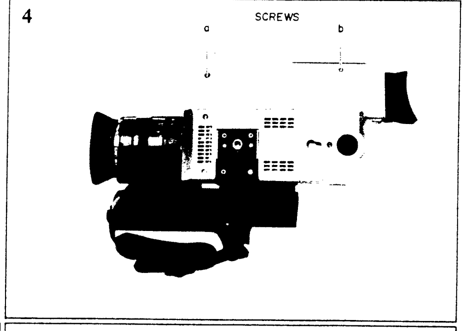


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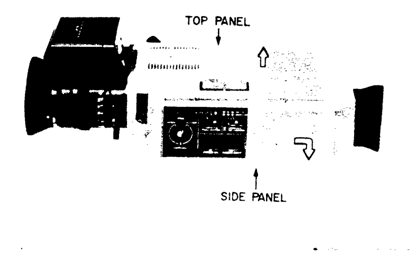


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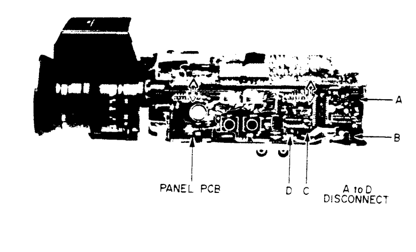


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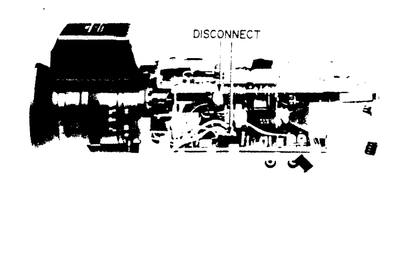

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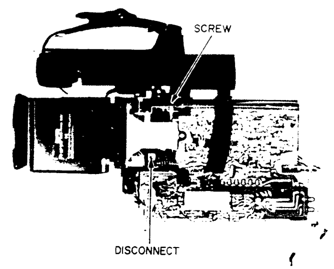


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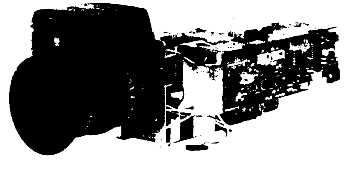

Assemble the panel PCB and connect the connectors with it. (Remain the dismounted EVF block as it is.)

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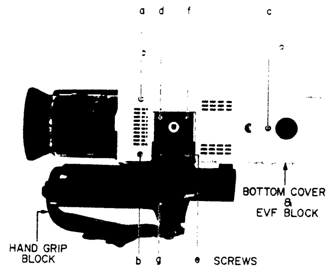


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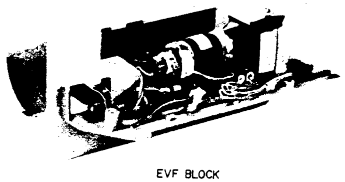
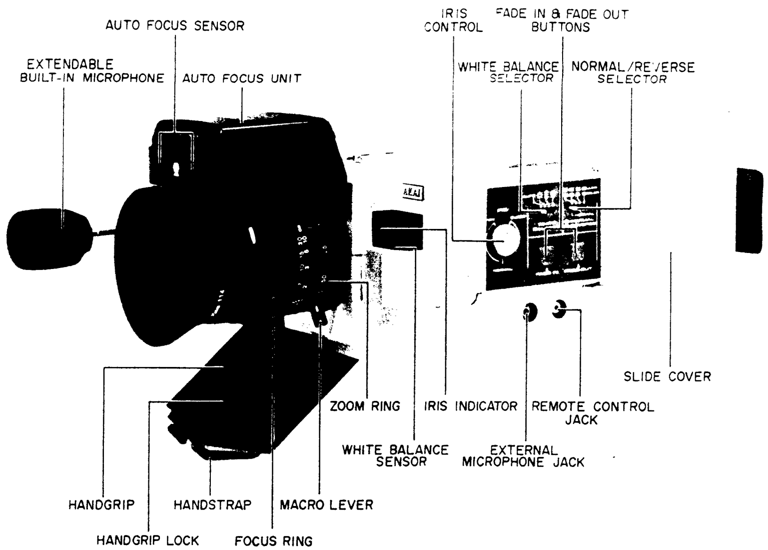





# III. CONTROLS



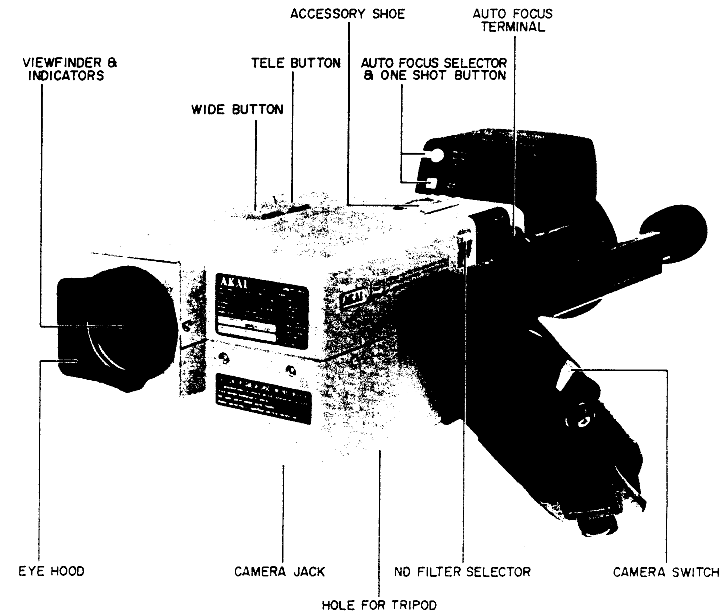




Fig. 1 Controls

# IV. PRINCIPAL PARTS LOCATION

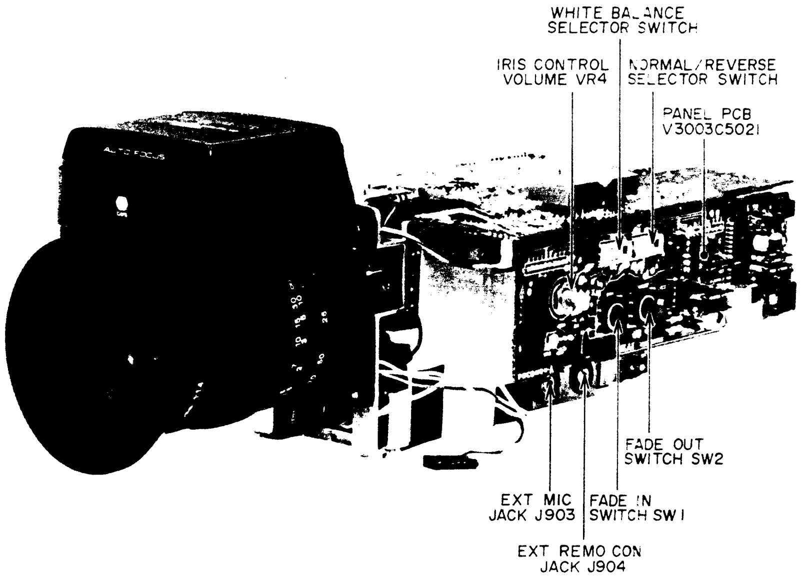



Fig. 2

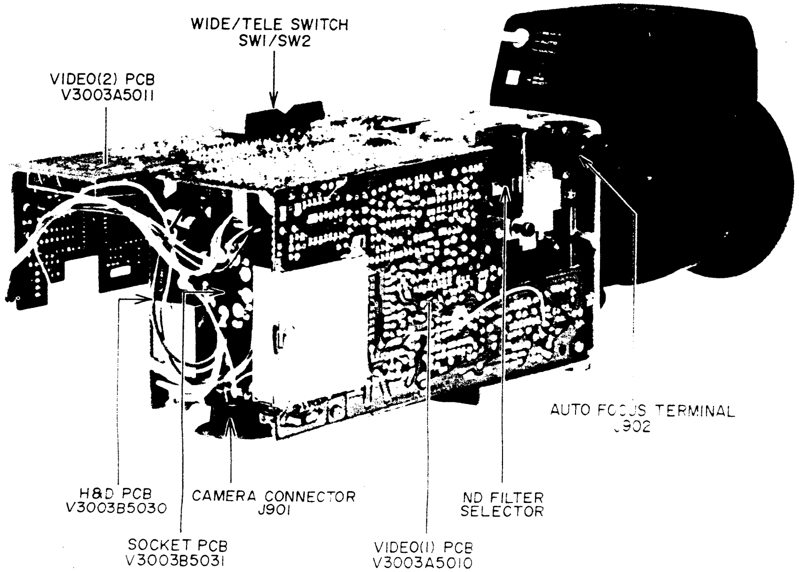



Fig. 3

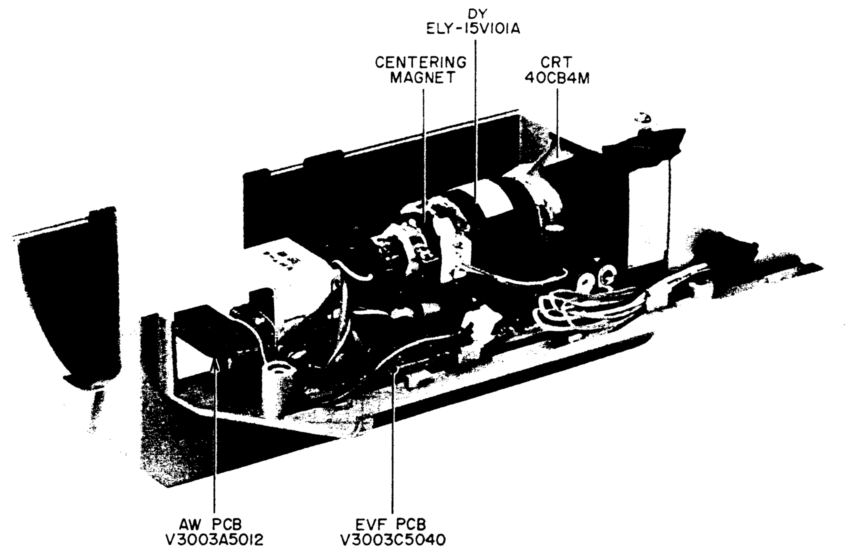



Fig. 4 EVF Block

# V. EXPLANATION OF VC-X1 CIRCUITRY

## 1. FEATURES OF VC-X1

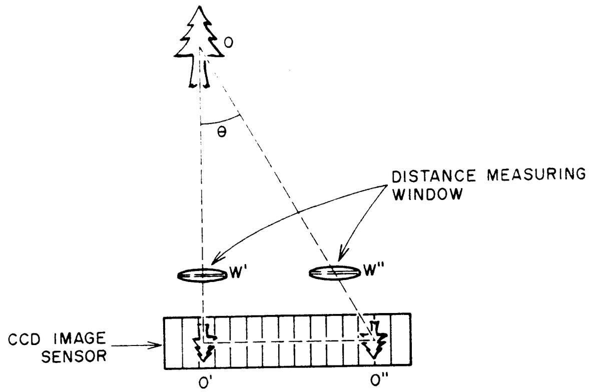



Fig. 5

### 1-1. Automatic Focus Control

The automatic focus adjusting unit employed on the VC-X1 provides focus adjustment in digital control mode through the use of a solid-state triangulation system (SSTS). Its major advantages are high accuracy, high sensitivity and elimination of unwanted noises.
The distance of the subject is measured in the same manner as in triangulation. As illustrated in Fig. 5, the image of the subject O, passes through the windows W and W'' and then is captured as images O' and O'' on the CCD image sensor. The signal at O' is read out by means of a clock and subsequently the number of clocks needed to read the signal at O'' is determined to calculate the angle O'-O-O'' or $\angle\theta$, which then is used to compute the distance of the subject from the camera. Nore that the longer the distance, the smaller the angle $\theta$, or the shorter the distance, the larger the angle $\theta$.

### 1-2. Automatic White Balance Control

The adjustment of white balance poses the most difficult problem in shooting with a color camera. To overcome this difficulty, VC-X1 employes two photodiodes to measure the color temperature of ambient light so as to permit switching automatically between INDOOR (3000°K) and OUTDOOR (5500°K).
Use of the two-diode system helps to ensure "naturalness" especially in outdoor shooting and simplicity of circuit design.

### 1-3. Auto Iris Control

The VC-X1 is provided with a VR for backlight control (BLC) to permit shooting against the light. The IRIS control knob is normally set at NORMAL position. This causes AGC in the video circuit to operate in the manner described below:
When shooting a dark scene, the iris is fully opened and then if gain is found still insufficient, the gain is increased electrically by means of AGC. Note that the auto-iris is closed with the power OFF, thereby protecting the vidicon.

### 1-4. Fade-In/Fade-Out

The VC-X1 permits both fade-in and fade-out through one-touche operation. Particularly, the fade-in operation is performed in "reserved" made, in which the fade-in operation is started as soon as recording is started.
During the Rec. OFF period. the fade-out operation is not accepted.
Further, establishing the STAND-BY mode after fade-out causes a fade-in operation to be performed automatically, thereby making it easier to shoot the next scene.



| | Y Signal | Chroma Signal | Picture |
|---|---|---|---|
| 1 | Normal | Normal | Normal Picture |
| 2 | Normal | Reverse | Gradation of brightness is reversed |
| 3 | Reverse | Normal | Expression of complementary color |
| 4 | Reverse | Reverse | Same picture as that of color negative film |

Fig. 6

| LED | Disappearance | Switching ON/OFF | Lighting |
|---|---|---|---|
| Red | Rec OFF | When VTR is not set completely in REC Mode. | Rec ON |
| Green | | Slow switching: When White Balance is not Normal.<br>Medium-speed switching: When Auto Iris is not Normal.<br>High-speed switching: When Nega-Posi is not Normal. | |
| Yellow | | Drop in battery voltage (10.8V ± 0.15V) | (1) Fade In reserved<br>(2) Fade Out in operation |

Fig. 7

### 1-5. Negative/Positive Reversal

In addition to normal pictures, special pictures may be produced through the three possible signal combinations shown in Fig. 6 below:
The mode "4" in Fig. 6 permits a negative color film to be viewed as positive color on the TV monitor.

### 1-6. LED Display in the Viewfinder

Three LEDs found within the viewfinder provides a means of displaying the following:

### 1-7. Built-in ND Filter

Use the large-diameter, high-speed lens can often result in the automatic aperture control not being able to cover all conditions under which the camera is used outdoors. In view of this, VC-X1 incorporates an ND-8 filter with a transmissivity of 12.5% so that shooting can be done even under quite-bright-light conditions.

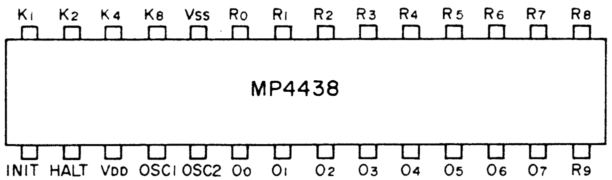
### 1-8. Power Zooming

The VC-X1 is capable of continuous zooming from TELE to WIDE with zooming speed changeable in two steps: one for slow zooming and the other (further depression of the button) for fast zooming.

### 1-9. Boom Microphone

A boom microphone with a window screeen (and with an additional window screen in case of a strong wind) is able to reduce significantly the sound of wind recorded.

# 2. EXPLANATION OF CIRCUITRY




| | | |
|---|---|---|
| $R_0$, $R_1$, $R_2$, $R_4$ | : | Key Scan Clock |
| $R_6$ to $R_8$ | : | LED Lighting Output |
| $R_3$ | : | Rec trigger |
| $R_9$ | : | Quick Fade Out |
| $O_0$ to $O_4$ | : | AGC Output (5 bits) |
| $OSC_1$, $OSC_2$ | : | Self-Oscillation |
| HALT | : | Microcomputer stops at "H". (GND'ed) |
| INIT | : | Initialize |

Fig. 8

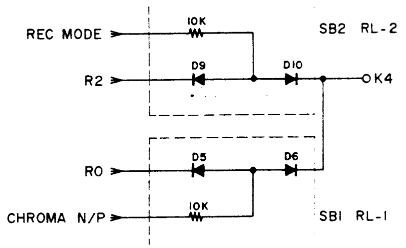



Fig. 9

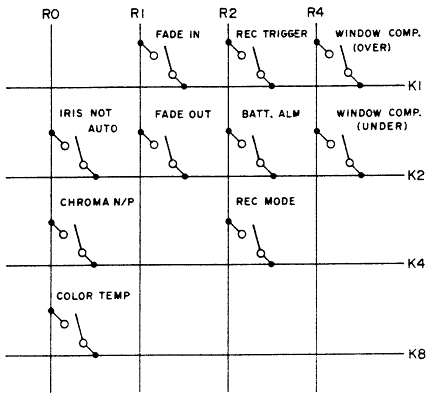



Fig. 10

## 2-1. Panel P.C Board

The various features of VC-X1 are controlled by the microcomputer MP4438 (IC1).

### 2-1-1. Diode Matrix Switch

In Fig. 9, when $R_0$ goes to "positive", $D_5$ is turned off, permitting the CHROMA N/P pulse to be supplied to $K_4$. Similarly, the Rec Mode signal is sent to $K_4$ only when $R_2$ is at "positive".

### 2-1-2. Window Comparator

Fig. 11 shows the comparator circuit used to operate the AGC circuit. If the Y signal level (input to the window comparator) is higher than voltage $E_Ⓐ$ at point Ⓐ, IC2-1 output goes to "H" level.

On the other hand, if the Y signal level is lower than voltage $E_Ⓑ$ at point Ⓑ, then IC-2 output goes to "H" level.

Thus, output goes to "L" if the input signal $E_Y$ is: $E_B < E_Y < E_A$.

The AGC circuit is controlled in such a manner that the output goes to "L".

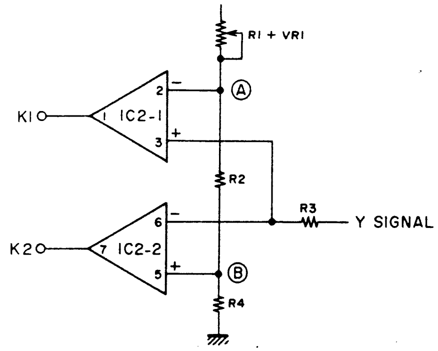



Fig. 11

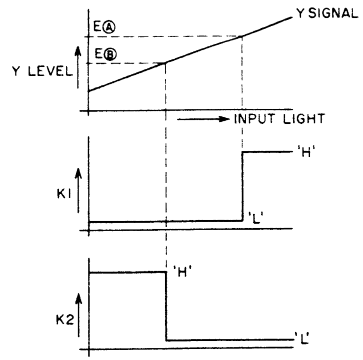



Fig. 12

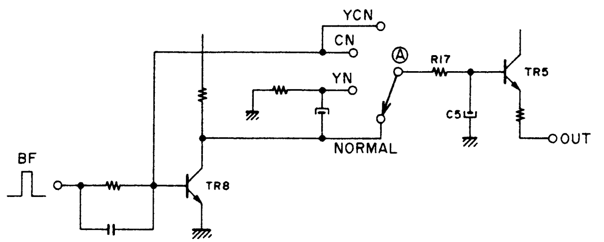



Fig. 13

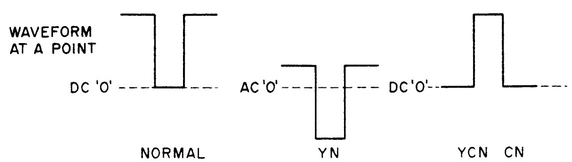



Fig. 14

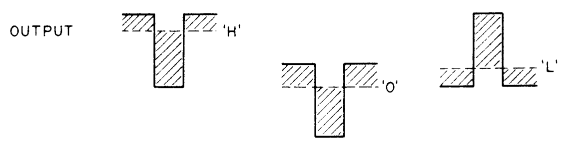



Fig. 15

### 2-1-3. Chroma Nega/Posi Reversal Circuit

This circuit not only sends information on the position of the NEGA/POSI SW to the microcomputer but also switches BF output between positive and negative.

The waveform of change-over switch output at point Ⓐ is shown in Fig. 14.

Since the pulse is integrated by R17 and C5, output (at TR5's emitter) goes to "H" with Normal, to "O" with YN or to "L" with YCN and CN.

This level is read into the microcomputer for display by LED of the position of the NEGA-POSI SW.

In addition, the burst flag is also switched by the NEGA-POSI switch. With Normal, it is reversed by TR8 to assume a negative polarity, whereas with Reversal mode, it is output as a pulse of positive polarity without being reversed.

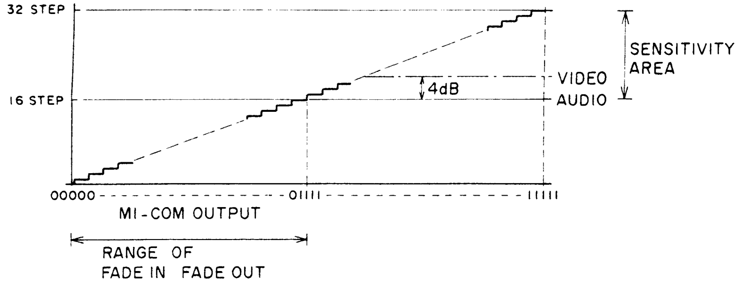



Fig. 16

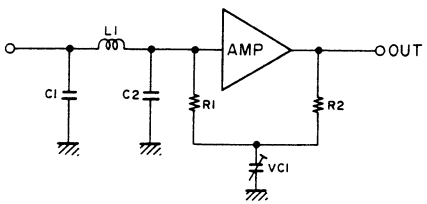



Fig. 17

### 2-1-4. AGC Output Circuit

Output from the AGC output ports $O_0 - O_4$ of the microcomputer is converted to an analog voltage by the staircase D-A converter circuit.
Further, when the FADE IN or FADE OUT button is depressed, the fade-in or fade-out operation is performed by changing the AGC output voltage as shown in Fig. 16.
TR4 is for discharging C4 to reduce the AGC output to zero for quick fade-out (with fade-in reserved, to start the fade-in operation at the same time that recording is started, it is necessary to start at video out "O").
EF is used for TR6 and TR7 since AGC for the audio circuit requires more current than with the video circuit.

## 2-2. Pre Amp

Fig. 17 is the block diagram for the pre amp circuit. The amp has a gain of about 55 dB. C1 provides a floating capacity between the lead from the videcon to L1 and the GND. L1 is a resonance coil known as Percival coil. The combined use of this coil and C1 contributes to an about 7 dB improvement in S/N at 4.1 MHz or so. (Note that L1 and C1 make up a 4.1 MHz resonance circuit). VC-X1 is a variable condenser used to correct the frequency characteristic in the low- to mid-ranges.
VR1 and VR2 in the pre amp schematic diagram are intended for adjusting the high-range characteristic.



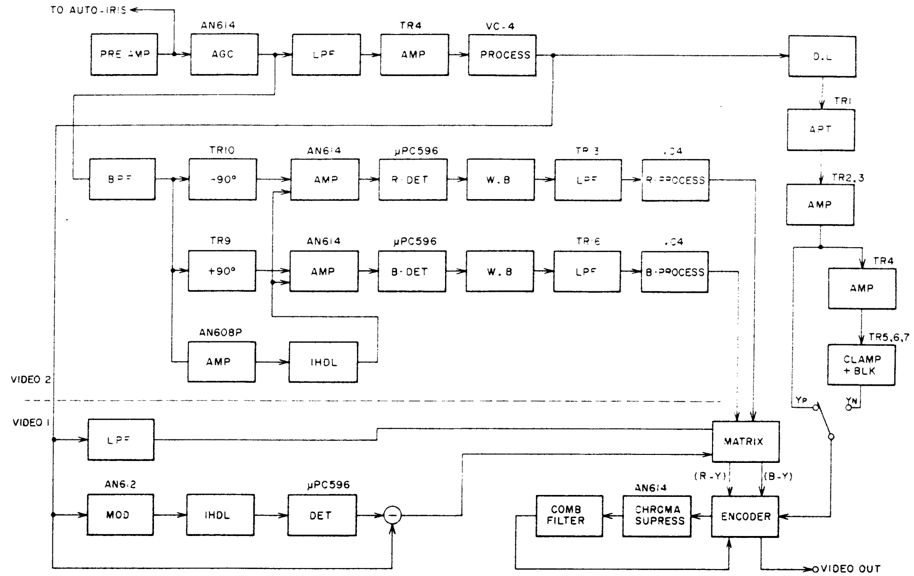



Fig. 18

## 2-3. Video Amp

The video amp is made up of two P.C Boards: Video (1) and Video (2). Its block diagram is shown in Fig. 18. Output from the pre amp is clamped by TR1 and then supplied to pin ① to IC1 (AN614).
The IC1 is an AGC circuit and its pin ③ accepts, via TR6 (current mirror circuit), the DC voltage that has been level-controlled by VR15.
(Note that this DC voltage is the result of D-A conversion of the 5-bit digital signal from the Panel P.C Board). The AGC amp output branches into two routes. With one route, the amp output is first passed through TR2 (EF) and then through LPF to have its modulated wave component removed before being applied to the Y-process circuit. With the other route, the AGC amp output is passed through BPF to take out the 3.58 MHz component only, which is then supplied to the CHROMA circuit.

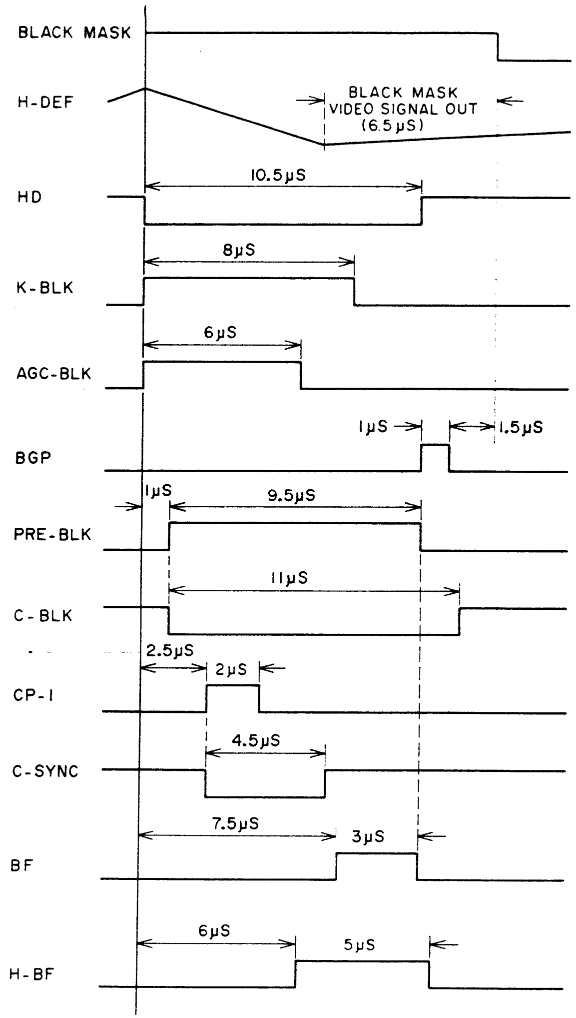



Fig. 19

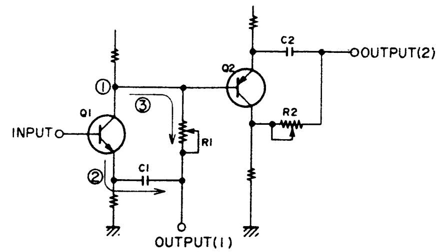



Fig. 20

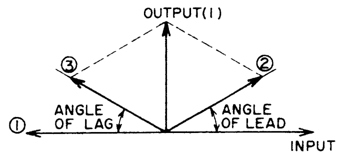



Fig. 21

**2-3-1. CHROMA Circuit**

1) Color separation circuit

The signal from BPF is phase-shifted ±90° by TR9 and TR10.

As can be seen from Fig. 20, when the reverse of the input signal ① is passed through an integration circuit consisting of R1 and C1, phase lag occurs as illustrated at ③ in Fig. 21. On the other hand, the input signal is passed through the EF circuit and then through a differential circuit consisting of C1 and R1, resulting in the signal phase as illustrated at ②. Thus, the resultant output is as shown in Fig. 21; i.e., the signal that has a phase lead of 90° over the input is obtained. In the similar manner, for output ②, the signal which has a phase lag of 90° with reference to the input is obtained.

When the signals obtained in the manner mentioned above (i.e., those signals whose phase difference from the input signal is ±90°) and the 1H-delayed input signal are fed into the subtraction circuit, or IC5 (AN614). the R and B signals modulted at 3.8 MHz can be obtained.

Each of these signals is detected by the detector and then passed through the white balance circuit to obtain each of outputs R and B by means of a load resistance (see the White Balance section).

The output is subsequently supplied to LPF, the output of which is then fed into IC7 (VC-4), or the process circuit.

2) White balance circuit

With the VC-X1, the white balance circuit is preceded by the detection circuit for 3.8 MHz-modulated waves (R and B) produced in the color separation circuit. (See Fig. 18). Fig. 22 shows the white balance circuit connections.

Color temperature is controlled by selecting the appropriate load resistance for TR1 and TR2 which must be D1'R1', R2', R3' or R4'TR11. For FL and 3000°K (or 5500°K with B-channel),

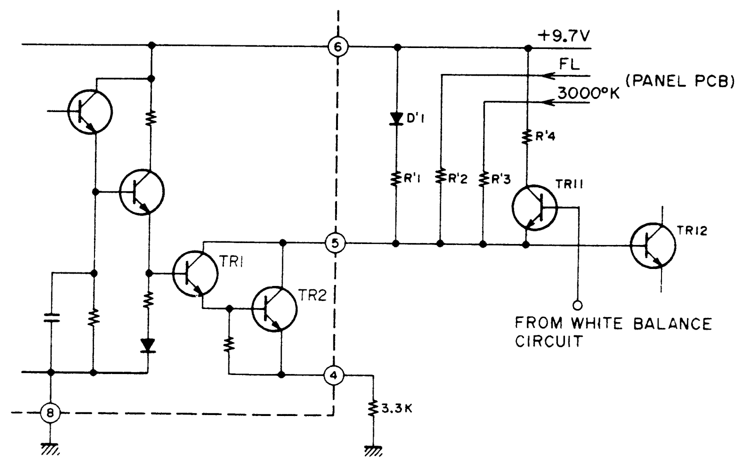



Fig. 22

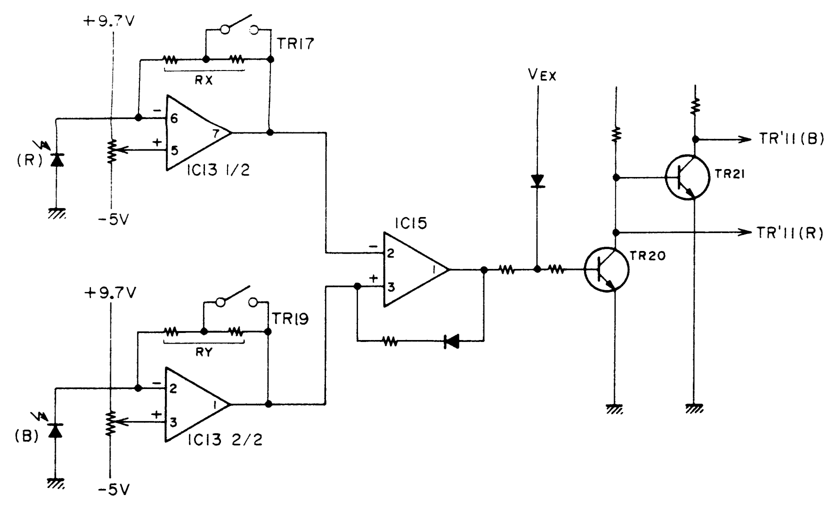



Fig. 23

switching is made by means of the change-over switch on the Panel P.C Board.

Also, when this change-over switch is at "AUTO" position, either 3000°K or 5500°K is selected automatically depending on whether TR11 (R-channel) is turned on or TR11' (B-channel) is turned on.

Auto White Balance

The Circuit shown in Fig. 22 is used to switch between TR11 (R-channel) and TR11' (B-channel). The color temperature at the switching point between 3000°K and 5500°K is around 3700°K.

With photo-diodes, forward current increases as the amount of incoming light increases. Therefore, with light of 3000°K coming in, a voltage drop by $R_X$ exceeds that by $R_Y$. This causes potential of TC13's 6 to drop, which in turn causes IC13's 7 to go to "H" level and IC13's 1 to go to "L" level. Since IC15's 2 is "H" and IC15's 3 is "L", its output (IC15 1) is "L". This causes TR20 to be turned off and TR21 to be turned on, which in turn turns TR11 on.

As a result, the gain of R-channel decreases and white balance is obtained. With IC14, as the amount of incoming light increases, voltage drop by $R_X$ and $R_Y$ increases, which in turn causes IC14's 2 and 1 to decrease and TR17/TR19 to be turned on. As a result, the dynamic range is widened. In the similar manner, if a considerable amount of light is existing, IC14's 1 decreases, TR18 is turned on, IC14's 6 goes to "L", and IC14's 7 goes to "H". This causes $V_{EX}$ to be applied from D1 to turn TR20 on, TR21 off and then TR11 on, thereby switching forcedly to 5500°K. (Note that this applies to AUTO mode only).

3) Process circuit

The process circuit consists of IC7, IC12 and IC8 and its connections are shown in Fig. 24.

Fig. 25 is the block diagram of the process circuit. The signal supplied to pin 3 is first passed through the base granded amp (TR1) and then subjected to gamma correction with voltages made available by R46, R47 and R48 being applied to the bases of TR2, TR3 and TR4, respectively. (See Fig. 25) Subsequently, the signal taken out via EF (TR5) has its black mask portion sampled and held by TR6 (or the blanking portion sampled and held by CP-1 in the case of the red or blue channel), and the output is applied to IC12 (feed-back clamp circuit) to keep constant the DC level of signals delivered from the base granded amp (TR1). The feature of this circuit is that the $\gamma$ point can be shifted by changing the DC level.

If the level of the black mask portion is raised due to change in temperature, dark current (or the DC fluctuation of the black portion in the case of R-ch or B-ch) increases. This causes potential at IC12's pin 6 to increase, and the level at pin 7 to be lowered, which in turn lowers the DC level of both emitter and collector (TR1), thereby correcting the dark current.

In addition, if the DC level is varied by VR7 as indicated by a, b and c in Fig. 26, the $\gamma$ point will be shifted as illustrated.

Note that at c, a slight increase in level causes "$\gamma_1$" to operate immediately, whereas at a, only a significant increase in level causes "$\gamma_1$" to operate. The $\gamma$-corrected signal is subjected to BLK in TR7 and then to SET-UP before being taken out as VC-4 output.

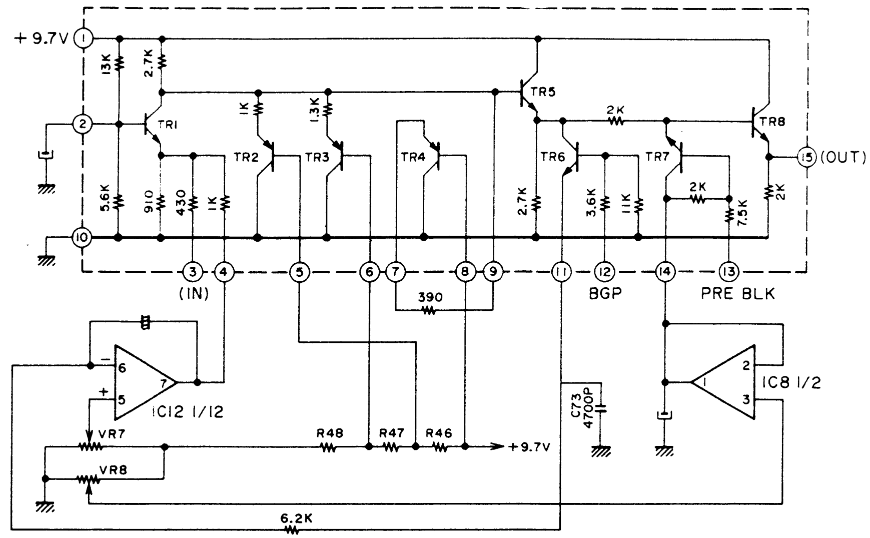



Fig. 24

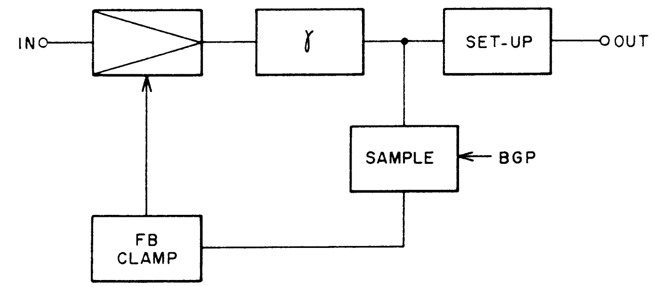



Fig. 25

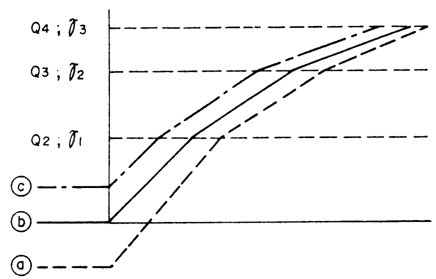



Fig. 26

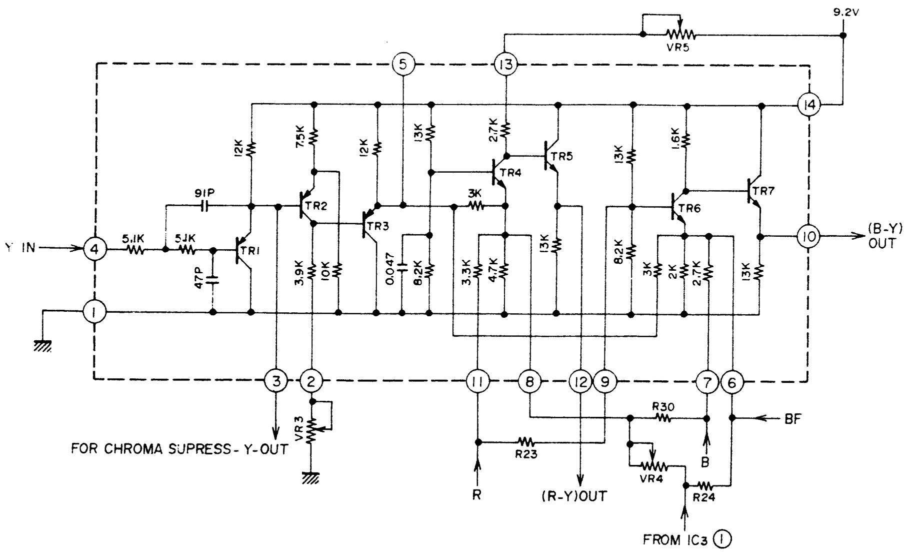



Fig. 27

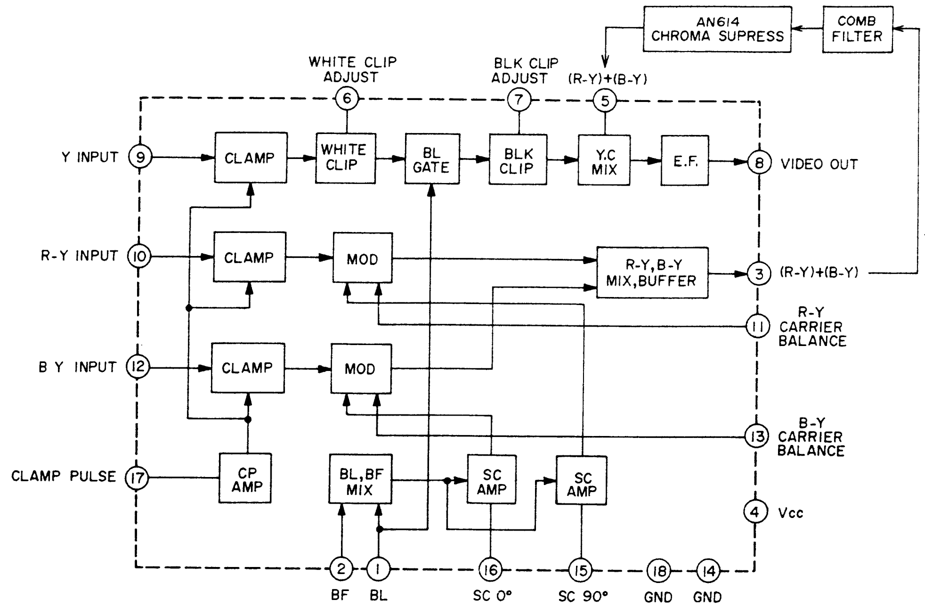



Fig. 28

4) Matrix circuit

The output from the process circuit on the video (2) P.C Board is supplied to the matrix circuit in IC4 (VC-1) on the Video (1) P.C Board.
The Y-signal is also supplied to IC4's pin ④ from the Video (2) P.C Board, and (B-Y) and (R-Y) are obtained as output from IC4's pin ⑩ and pin ⑫ respectively. In addition, the correction signal from the vertical correlation circuit is also supplied to IC4's pins ⑧ and ⑥ to adjust vertical correlation. The TR1 circuit acts as an active low-pass filter.

5) Encoder circuit

The output (B-Y) from IC4 ⑩ and output (R-Y) from IC4 ⑫ are supplied to IC5 ⑫ and ⑩ respectively. The Y-signal that has undergone Nega/Posi selection on the Panel P.C Board is supplied to IC5 ⑨.
In addition, the subcarrier is supplied to IC5 ⑮ and ⑯ and, after double balanced modulation, is taken out as output from IC5 ⑧.
As shown in Fig. 28, IC5 incorporates a circuit whose purpose is to take out the (R-Y) + (B-Y) output from pin ③ and return it to pin ⑤ via the CHROMA SUPPRESS circuit. This permits chroma signals to be removed if the amount of light is less or more than specified, resulting in the B/W signal being produced.

6) Chroma suppressor

This circuit consists of IC6 and TRs 9–13. IC6 is controlled through the level of the Y signal supplied to IC4: the (R-Y) + (B-Y) signal is cut off if the amount of light is not at a certain level.
If the difference between the base potential of TR10 (as set by VR9) and the emitter potential ($V_H$) of TR10 becomes 0.6V or less as the Y signal level goes up because of increase in the amount of incoming light, then TR10 is turned off, and the voltage applied to IC6 ⑤ increases.
Since TR13 is also off at this time, voltage at IC6 ⑤ is equal to potential at IC6 ①. On the other hand, as the Y-signal level goes down past a certain level, the difference between TR12's base potential and emitter potential becomes more than 0.6V, causing TR12 to be turned on. This also causes TR10 to be turned on, resulting in the potential at IC6 ⑤ being equal to that at IC6 ①. Since the output of IC6 (AN614) is "O" when the potential at pin ⑤ is equal to that at pin ①, the chroma signal will be cut off if the amount of incoming light is not at the specified level, as discussed above.

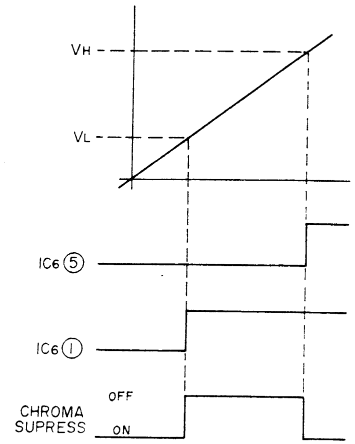



Fig. 29

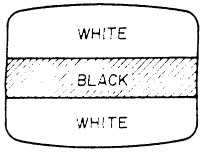



Fig. 30

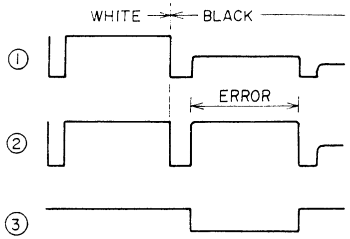



Fig. 31

7) Vertical color error correction circuit
When the picture shown in Fig. 30 is displayed, the signal pattern involved in the white/black interface is as illustrated in Fig. 31.
If the signal pattern mentioned above is delayed by 1H, a different signal pattern shown in ② will be produced.
Subtracting ② from ① will result in the signal pattern illustrated in ③ above, which is then added to ① to adjust vertical color errors.

### 2-3-2. Y-Signal Circuit

The signal that has passed through the AGC circuit on the Video (2) P.C Board is then routed through EF (TR2) and then through FL1 (LPF : 3 MHz or lower) where the signal has its modulated chroma component removed (i.e., the Y-signal is passed through the process circuit of VC-4 and then taken out as the AGC signal from J15 ⑦ to be delivered to the Panel P.C Board.
The Y-signal is also supplied to the Video (1) P.C Board as "Yout".

1) Aperture circuit
As illustrated in Fig. 32, the waveform Ⓑ is obtained through a differential circuit with L and differential circuit with C3.

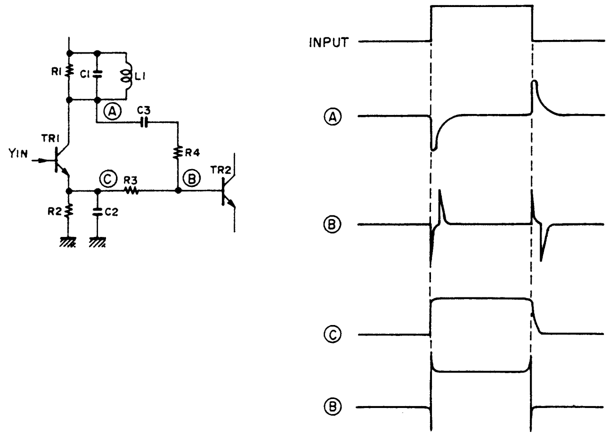



Fig. 32



2) Y Nega/Posi circuit
The Posi signal is conveyed to the N/P change-over switch on the Panel P.C Board via TR2 and TR3.
The Nega signal is produced by TRs 4–6.
With only the inversion circuit involved, there will be no output if Ⓑ is clamped by CP as illustrated in Fig. 34. The disappearance of the signal can be avoided by clamping with D1 after introducton of HD with TR4.

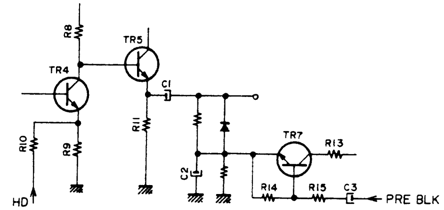



Fig. 33

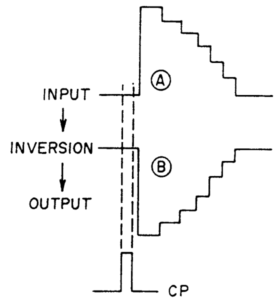



Fig. 34

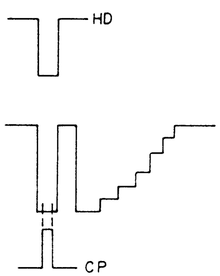



Fig. 35

## 2-4. Auto Iris

With the auto iris circuit, the pre-amp output is first passed through EF (TR22), then clamped by TR23, and finally integrated by R82/C42.
Subsequently, after impedance conversion, the iris motor is driven by IC16. The drive coil is one that is located between P12's 3 and 4, while the dump coil is one that is placed between P12's 1 and 3.
The iris speed is controlled by taking out acceleration output from the dump coil and then supplying it to IC16 6.
In addition, balance current is alway flowing through the drive coil since the iris is always subjected to a force which tends to close it.
Thus, turning off the power causes the iris to be closed automatically, thereby providing a means of protecting the vidicon.

## 2-5. Power Zoom

The power zoom circuit is driven by IC17.
Depressing the tact switch slightly causes Common, A and C to be connected (first step).
Further depression of the switch causes all of Common, A, B and C to be brought into contact (Second step).
Thus, in the first step with the Wide Switch, voltage $EW_1$ which is obtained by dividing 4.7V by R95 and R94 is applied to IC17 6. When the switch is further depressed, voltage EWz which is obtained by dividing 4.7V by R95//R96 and R94 is applied.
Since $EW_1 < EW_2$, output voltage in the second step is lower than that in the first step, making zooming possible in the second step.

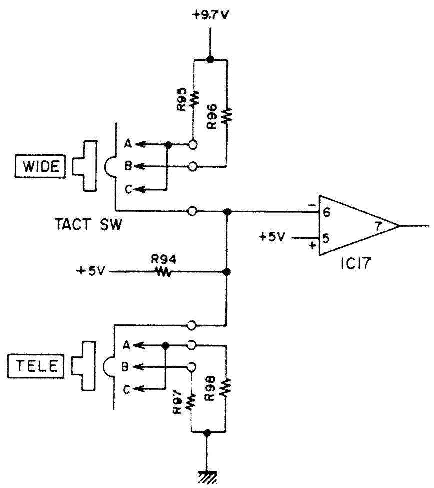



Fig. 36

# VI. ADJUSTMENT

## 1. TOOLS, ETC. REQUIRED FOR ADJUSTMENT

### 1) Linearity Checker Circuit

It is necessary to build a linearity checker circuit which is required in adjustment step 14. Note that the major parts and their numbers are as follows:

| Parts No. | Description |
|---|---|
| EI704201 | IC M5144P |
| ET632204 | TR 2SC945L K, P, Q |
| EC700214 | Trimmer/C. MCV50D1H200YZ VC-65 |

Method of Adjusting TC1 and VR1

Supply a sine wave of 3.8 MHz to INPUT and adjust TC1 so that the waveform on the oscilloscope is at 5.5V (center). Then, adjust VR1 so that a difference of ±1V can be obtained with 3.8 MHz ± 100 kHz.

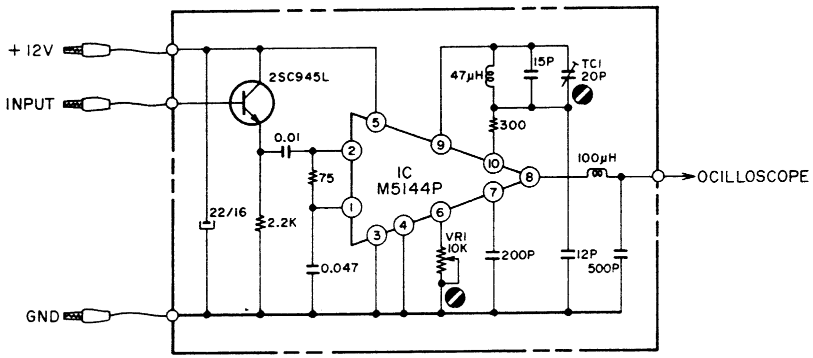



Fig. 37

### 2) Extension Cords

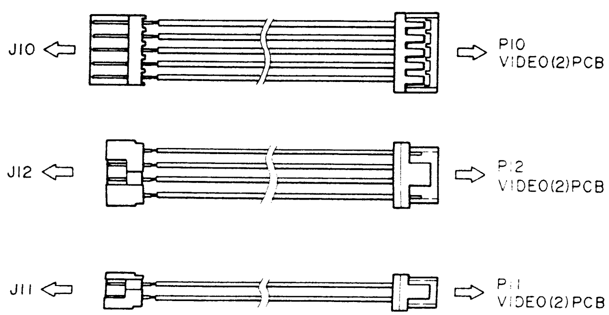



Fig. 38

### 3) Resistances for heaters

Since the heaters for the vidicon and EVF's CRT are connected in series, if adjustment is made with the EVF BLK removed, a resistance of 36 ohms must be installed as illustrated above.
Note that a resistance of 1 kohm serves as a video circuit's output impedance.

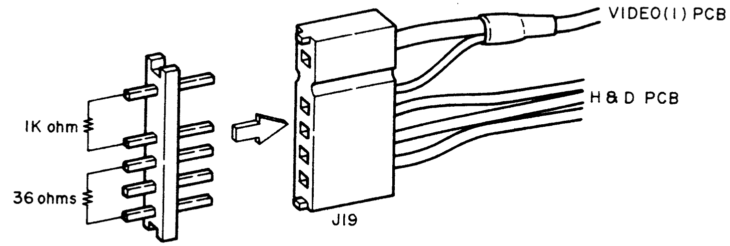



Fig. 39

## 2. ADJUSTING THE CAMERA PROPER

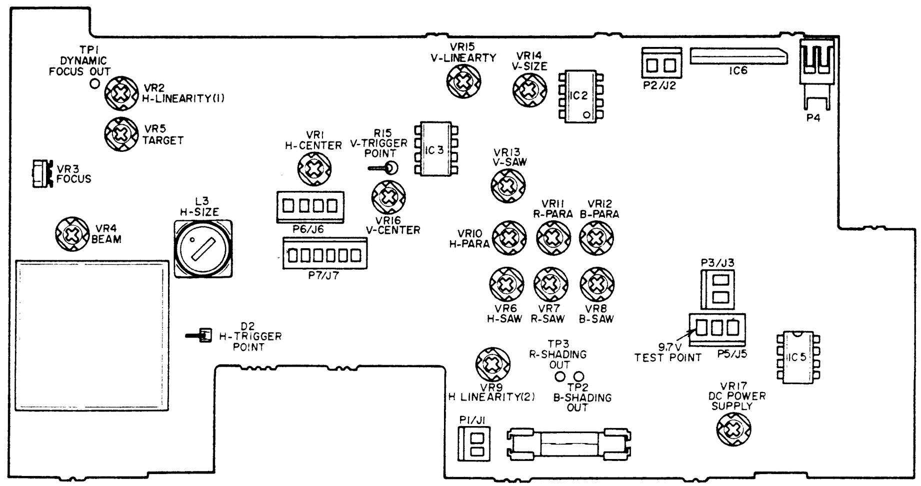
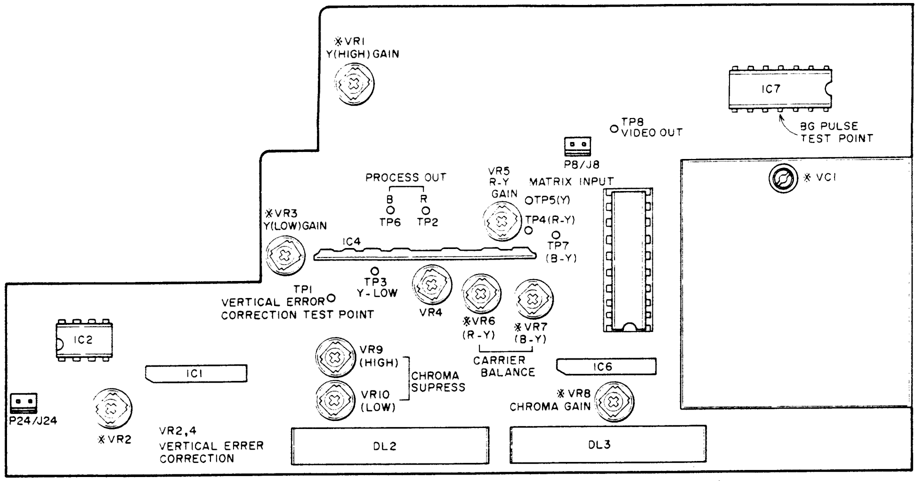
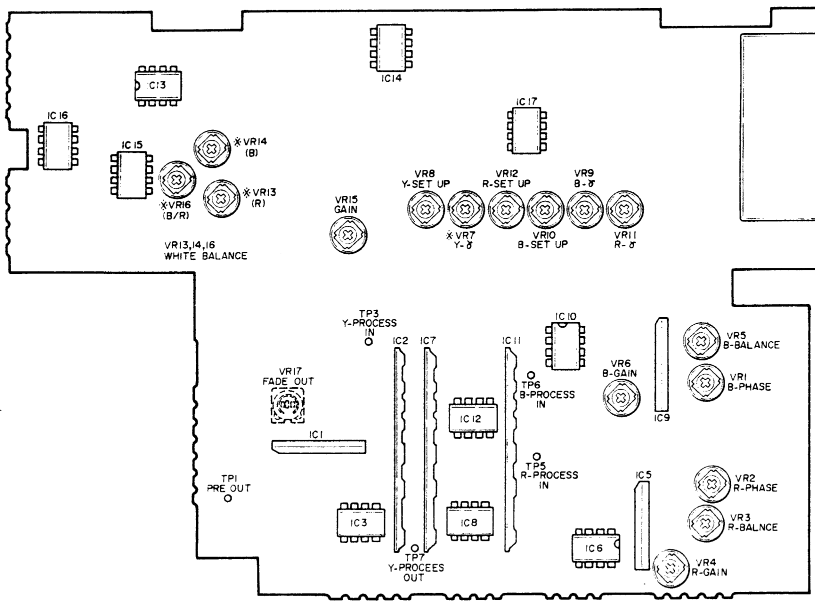



Fig. 40 H & D PCB




Volume and Trimmer/C. marked with ※ have been already adjusted in our factory. Do not adjust, accordingly.

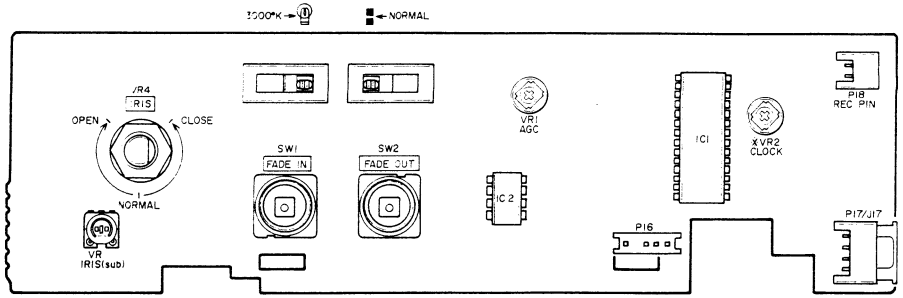
Fig. 41 Video (1) PCB




Volume marked with ※ have been already adjusted in our factory. Do not adjust, accordingly.

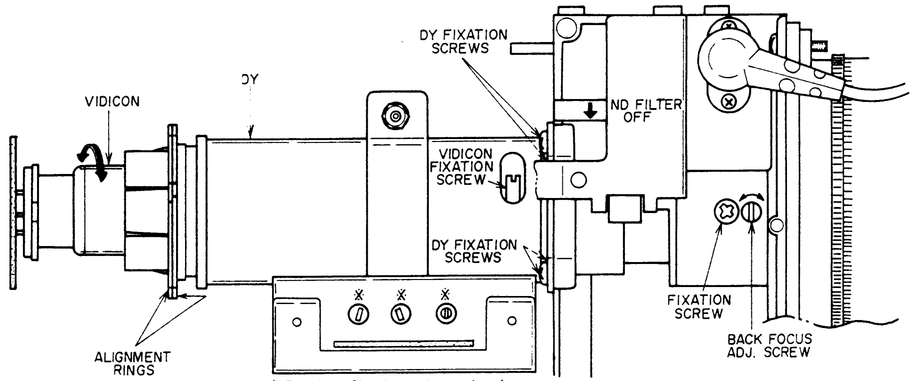
Fig. 42 Video (2) PCB





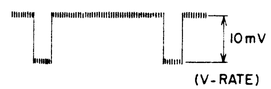
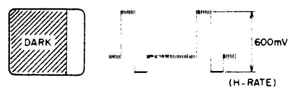
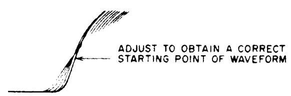

Volume marked with ※ have been already adjusted in our factory. Do not adjust, accordingly.

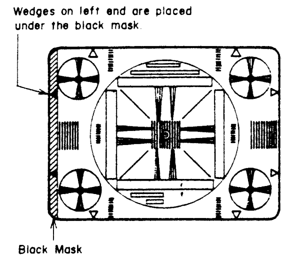
Fig. 43 Panel PCB

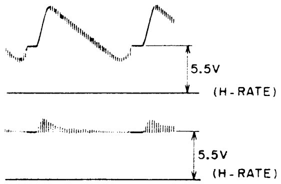
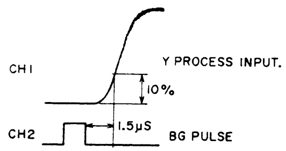
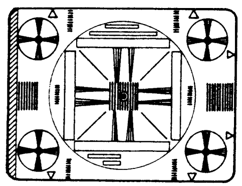



※ Pre Amp Circuit has been already adjusted in our factory. Do not adjust, accordingly.

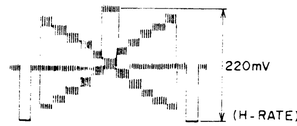
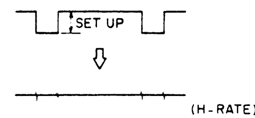
Fig. 44

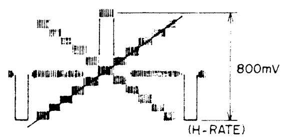
| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 1 | Setting | | | | | Set each switch to proper position<br>Nega/Posi switch NORMAL<br>White Balance switch 3000°K<br>AF switch MANUAL<br>ND filter OFF |
| 2 | DC Power Supply | | | P5 ① (H & D PCB) | VR17 (H & D PCB) | Increase the voltage by steps and set at +9.7V. |
| 3 | Beam | White | Open | Monitor Screen | VR4 (H & D PCB) | Set VR4 so that the picture is produced on the screen. |
| 4 | Checking for dirt | White | Open | Monitor Screen | | Upon replacement of the vidicon, make certain that there is no adhering dirt or dust. |
| 5 | Target (After 20 ~ 30 minutes of ageing) | | Close | TP1 (Video 2 PCB) | VR5 (H & D PCB) |  <br>Adjust so that the waveform has a height of 10 mV (at 20°C ± 5°C). |
| 6 | Beam | Bright object in portion of picture | Open | TP1 (Video 2 PCB) | VR4 (H & D PCB) |  <br>Include a bright object in a portion of the picture and adjust so that the saturation level of the output wave-form is 600 mV. |
| 7 | Turning Tube | White | F5, 6 | TP1 (Video 2 PCB) | Vidicon (Loosen retaining screws) |  <br>Turn the vidicon so that the rising portion of the waveform appears as a single line. (Caution: high tension is involved). |
| 8 | Horizontal Adjustment | Resolu-tion | F5, 6 | Monitor Screen | Deflecting coil (Loosen 4 retaining screws) | Loosen 4 screws retaining the deflecting coil and turn the deflect-ing coil so that the picture is made level. |

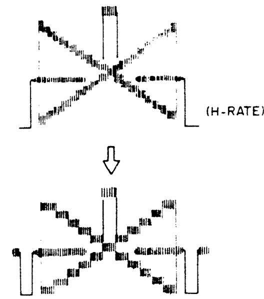
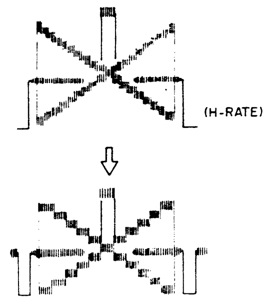
| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Point | Result & Remarks |
|---|---|---|---|---|---|---|
| 9 | Size | Resolu-lution | F5, 6 | Monitor Screen | VR14 (V Size) L3 (H Size) (H & D PCB) |  <br>Rotate the zoom ring to display the resolution pattern as large as possible on the monitor screen. Adjust VR14 and L3 so that wedges on each side of the pattern coincides with the boundary of the monitor screen. |
| 10 | Ageing | | Close | | | Allow about one hour of ageing (at 20°C ± 5°C). |
| 11 | Readjust steps 5 and 6 (target and beam). | | | | | |
| 12 | Focus | White | F5, 6 | TP1 (Video 2 PCB) | VR3 (H & D PCB) |  <br>Adjust so that the modulated wave in the waveform becomes maximum. |
| 13 | Back Focus | | | Monitor Screen | Back Focus Adjustment Screw | 1. Set the focus ring to " ∞ ", zoom to WIDE, and then shoot a distant object.<br>2. Loosen the fixation screw and focus by means of the adjusting screw.<br>3. Zoom to TELE and focus by means of the focus ring.<br>4. Zoom once again to WIDE and adjust to get the right focus by means of the adjusting screw.<br>5. Repeat the above steps 1 through 4 until the object focused upon zooming to WIDE is found to be still in focus upon zooming to TELE. After this, tighten the fixation screw. |

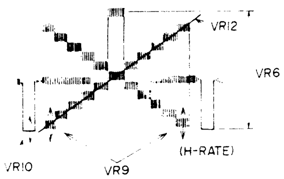
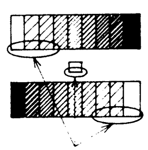
| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 14 | H Deflection | White | F5, 6 | Connect linearity checker input to TP1 (Video 2 PCB) and its output to oscilloscope. | L3 (H Size) VR3 (H Linearity) VR9 (H Linearity) (H & D PCB) | <br>Obtain an average output of 5.5V by means of L3. Adjust VR2 and VR9 alternately to flatten the waveform. Repeat the adjustment until the satisfactory results are obtained. |
| 15 | H Center | White | F5, 6 | CH1: TP3 (Video 2 PCB) CH2: IC7 ④ (Video 1 PCB) | VR1 (H & D PCB) | <br>Adjust VR1 so that the interval between the rising portion of the Y-process input waveform and the BG pulse is 1.5 μsec. |
| 16 | V Deflection | Resolu-tion | F5, 6 | Monitor Screen | VR14 (V-Size) VR15 (V Linearity) (H & D PCB) | <br>1. Zoom up so that the right-hand wedges for H-direction are as near to the edge of the monitor screen as possible. Note that the left-hand wedges must be hidden by the black mask.<br>2. Adjust by means of VR14 so that the wedges for V-direction are as near to the edges of the monitor screen as possible.<br>3. Adjust VR15 so that the circles in the corners are free of distor-tions. |



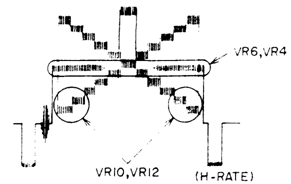
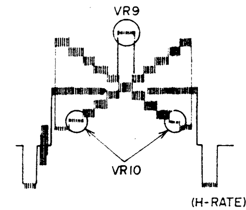
| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 17 | V Center | Resolu-tion | F5, 6 | Monitor Screen | VR16 (H & D PCB) | Zoom to TELE and adjust the camera position so that the center of the pattern is at the center of the monitor screen. Zoom to WIDE and adjust VR so that the center of the pattern coincides with the center of the monitor screen. |
| 18 | IRIS Set | Gray Scale | Click | TP1 Video 2 PCB) | VR3 (Panel PCB) | <br>Adjust VR3 so that the white peak (center) stands at 220 mV. |
| 19 | Fade Out | Gray Scale | Click | TP3 (Video 2 PCB) | VR17 (Video 2 PCB) | Short the Rec socket P18 (Panel PCB) with a screwdriver, etc. Press the fade-out SW to verify that the picture darkens.<br><br>Adjust VR17 so that the waveform is minimized. Press the fade-in SW to verify that the picture brighten. |
| 20 | AGC (1) | Gray Scale | Release iris from "click" position and turn it clockwise slightly. | TP3 (Video 2 PCB) | VR15 (Video 2 PCB) | <br>Adjust VR15 so that the white peak (center) stands at 550 mV. |
| 21 | AGC (2) | Gray Scale | Click | TP3 (Video 2 PCB) | VR1 (Panel PCB) | Put the iris back to the "click" position and adjust VR1 so that the white peak (center) stands at 550 mV. |
| 22 | AGC (3) | Gray Scale | Close | TP7 (Video 2 PCB) | VR8 (Video 2 PCB) | <br>Adjust VR8 so that "set-up" becomes zero. |

| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 23 | Alignment | White | Click | TP1<br>TP3<br>TP2<br>(H & D PCB) | VR3<br>(Focus)<br>VR7<br>(R-SAW)<br>VR11<br>(R-PARA)<br>VR8<br>(B-SAW)<br>VR12<br>(B-PARA)<br>(H & D PCB) | Set up a state in which Dynamic Focus/Shading is cancelled. |
| | | | | Monitor Screen | VR3<br>(H & D PCB)<br>Alignment ring | Adjust the alignment ring and Focus (VR3) alternately so that the optimum shading is obtained. |
| 24 | Focus | White | Click | Monitor Screen | VR3<br>(Focus)<br>VR10<br>(H-PARA)<br>VR6<br>(H-SAW)<br>VR13<br>(V-SAW)<br>(H & D PCB) | 1. Reduce the green portion of the picture by means of VR3.<br>2. Minimize unevenness in color at the sides and around the center by means of VR10.<br>3. Minimize unevenness in color at the right and left by means of VR6.<br>4. Minimize unevenness in color at the top and bottom portions of the screen by means of VR13.<br>5. Minimize unevenness in color around the center of the screen by means of VR3.<br>6. For unevenness in color not mentioned above, readjust alignment. |
| 25 | Readjust H-Center (Step 15). | | | | | |
| 26 | Y-Signal | Gray Scale | Manual | TP7<br>(Video 2 PCB) | VR7<br>(Video 2 PCB) | <br>Set the Iris Volume (VR4) so that the white peak (center) stands at 800 mV. Also, adjust VR7 so that the staircase wave is made linear. |
| | | | Close | TP7<br>(Video 2 PCB) | TP7<br>(Video 2 PCB) | Verify that "set-up" is zero.<br>If not zero, perform step 22 again. |

| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 27 | B-Signal | Gray Scale | Click | TP6<br>(Video 2 PCB) | VR1<br>(B-Phase)<br>VR5<br>(B-Balance)<br>(Video 2 PCB) | <br>Adjust VR1 and VR5 alternately so that a satisfactory staircase waveform is obtained. |
| | | | | TP6<br>(Video 1 PCB) | VR9 (Gain)<br>(Video 2 PCB) | Adjust VR9 so that the white peak (center) stands at 800 mV. |
| 28 | R-Signal | Gray Scale | Click | TP5<br>(Video 2 PCB) | VR2<br>(R-Phase)<br>VR3<br>(R-Balance)<br>(Video 2 PCB) | <br>Adjust VR2 and VR3 alternately so that a satisfactory staircase waveform can be obtained. |
| | | | | TP2<br>(Video 1 PCB) | VR4 (Gain)<br>(Video 2 PCB) | Adjust VR4 so that the white peak (center) stands at 800 mV. |

| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 29 | White Balance (1-1) | Gray Scale | Click | CH1: TP7 (Video 2 PCB) CH2: TP6 (Video 1 PCB) | VR6 VR9 VR10 (Video 2 PCB) VR12 VR8 (H & D PCB) |   VR6 B-Gain: Magnitude of entire waveform<br>VR9 B-γ: Lower portion of staircase wave<br>VR10 B-Setup: "Set-up" portion<br>VR12 B-Parabola: Linearity of staircase wave<br>VR8 B-Saw tooth: Longitudinal slope of staircase wave<br>Adjust VRs listed above so that the Y-process output waveform (CH1) and B-process output waveform (CH2) are made identical. |
| 30 | White Balance (1-2) | Gray Scale | Click | CH1: TP7 (Video 2 PCB) CH2: TP2 (Video 1 PCB) | VR4 VR11 VR12 (Video 2 PCB) VR11 VR7 (H & D PCB) | VR4 R-Gain<br>VR11 R-γ<br>VR12 R-Setup<br>VR11 R-Parabola<br>VR7 R-Saw tooth<br>As in step 29, adjust VRs listed above so that the Y-process output waveform (CH1) and R-process output waveform (CH2) are made identical. |
| 31 | Vertical Error Correction | Gray Scale | Click | TP1 (Video 1 PCB) | VR2 (Video 1 PCB) |   Adjust VR2 so that the output waveform is reduced to zero. |
| | | | | Monitor Screen | VR4 (Video 1 PCB) |   Adjust VR4 so that there are no colored shades produced in the straight portions of the gray scale indicated above. |



| Step | Adjustment Item | Pattern | Iris | Test Point | Adjustment Parts | Result & Remarks |
|---|---|---|---|---|---|---|
| 32 | White Balance (2) | Gray Scale | Click | TP8 (Video 1 (PCB) | VR10 (B-set up) VR12 (R-set up) VR6 (B-Gain) VR4 (R-Gain) (Video 2 PCB) |   Adjust VR10 and VR12 so that the carriers in the lower portions of the staircase wave are minimized.<br>Also, adjust VR6 and VR4 so that the carrier around the middle of the staircase wave is minimized. |
| 33 | Chroma Supressor | Gray Scale | Click | TP8 (Video 1 PCB) | VR10 (Video 1 PCB) |   Adjust VR10 so that the second lowest carrier of the staircase wave is minimized. |
| | | | Open | TP8 (Video 1 PCB) | VR9 (Video 1 PCB) | Adjust VR9 so that a little of the carrier at the white peak (center) is left, as shown above.<br>Note that minimizing the carrier will result in discontinuity of color. |
| 34 | Assembling | Before assembling, disconnect power supply and discharge high voltage by shorting between terminals 5 – 8 of the Socket PCB and the chassis with the use of a 1Mohm resistance. | | | | |
| 35 | White Balance (2) | Readjust white balance (2) (step 32). | | | | |
| 36 | Ageing | Close the iris and allow about five hours of ageing. (This is required only when the vidicon is replace.) | | | | |
| 37 | White Balance (2) | Readjust white balance (2) (step 32).<br>(This is required only when the vidicon is replaced.) | | | | |
| 38 | Confirming | Display the white pattern and verify that there is no uneveness in color or abnormal coloration. If a vectorscope is available, make check on carrier balance. | | | | |

## 3. ADJUSTING THE EVF BLOCK

To adjust the EVF Block, it is necessary to connect it to the camera body that has been thoroughly adjusted.

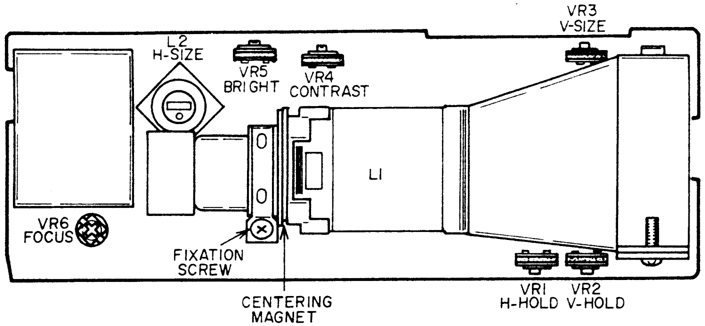
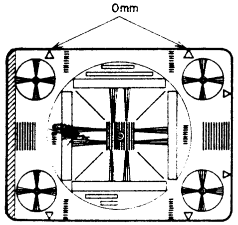
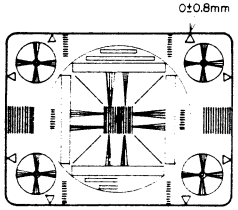
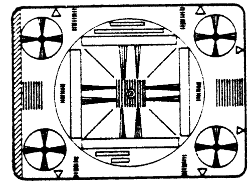
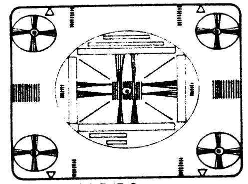
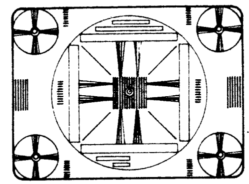



Fig. 45 EVF Block

| Step | Adjustment Item | Pattern | Test Point | Adjustment Point | Result & Remarks |
|---|---|---|---|---|---|
| 1 | H-Hold | Resolution | EVF Screen | VR1 (H-Hold) | Fix at point at which the picture synchronizes into one picture. |
| 2 | V-Hold | Resolution | EVF Screen | VR2 (V-Hold) | Fix at position at which the picture is stationary. |
| 3 | CRT Yoke | Resolution | Monitor Screen EVF Screen | L1 (DY) |  Monitor Screen  EVF Screen Set the camera so that the wedges found in the upper and lower portions of the pattern align with the boundary of the monitor screen. Then, turn the zoom ring to bring the wedges onto the boundary of the EVF screen, at which time the deflecting yoke must be adjusted so that a picture slope of 0 ± 0.8 mm is obtained. |

| Step | Adjustment Item | Pattern | Test Point | Adjustment Point | Result & Remarks |
|---|---|---|---|---|---|
| 4 | H Deflection Size & V Deflection Size | Resolution | Monitor Screen & EVF Screen | L2 (H-Size) VR3 (V-Size) |  (a)Monitor Screen  (b) EVF Screen  (c)EVF Screen 1. Set the camera so that the wedges under each side of the pattern align with the boundary of the monitor screen. 2. It is also necessary to make the following adjustment so that 85% ± 5% of the resolution pattern is displayed on the EVF screen. 3. Adjust L2 (H-deflection size) so that the pattern displayed is as shown in (b) above. 4. Adjust VR3 (V-deflection size) so that the circles within the resolution pattern are free of distortions. 5. Verify that the picture displayed on the EVF screen is 85% ± 5% of the picture displayed on the monitor screen. |

| Step | Adjustment Item | Pattern | Test Point | Adjustment Point | Result & Remarks |
|---|---|---|---|---|---|
| 5 | Contrast | Gray Scale | EVF Screen | VR4 | BLACK WHITE<br>10 9 8 7 6 5 4 3 2 1<br>Adjust VR4 so that No. 9 and No. 10 of Gray Scale chart attached to the resolution pattern can be distinguished. |
| 6 | Brightness | Gray Scale | EVF Screen | VR5 | Adjust VR5 to such a brightness that facilitates focusing. |
| 7 | Focus | Resolution | EVF Screen | VR6 | Adjust VR6 so that the highest resolution can be obtained: verify that the resolution obtained is at least 330 lines (Horizontal) by 270 lines (Vertical). |
| 8 | Centering | Resolution | Monitor Screen & EVF Screen | Centering Magnet | Adjust centering magnet so that the center of the resolution pattern reflected on monitor screen comes to the center of screen. |

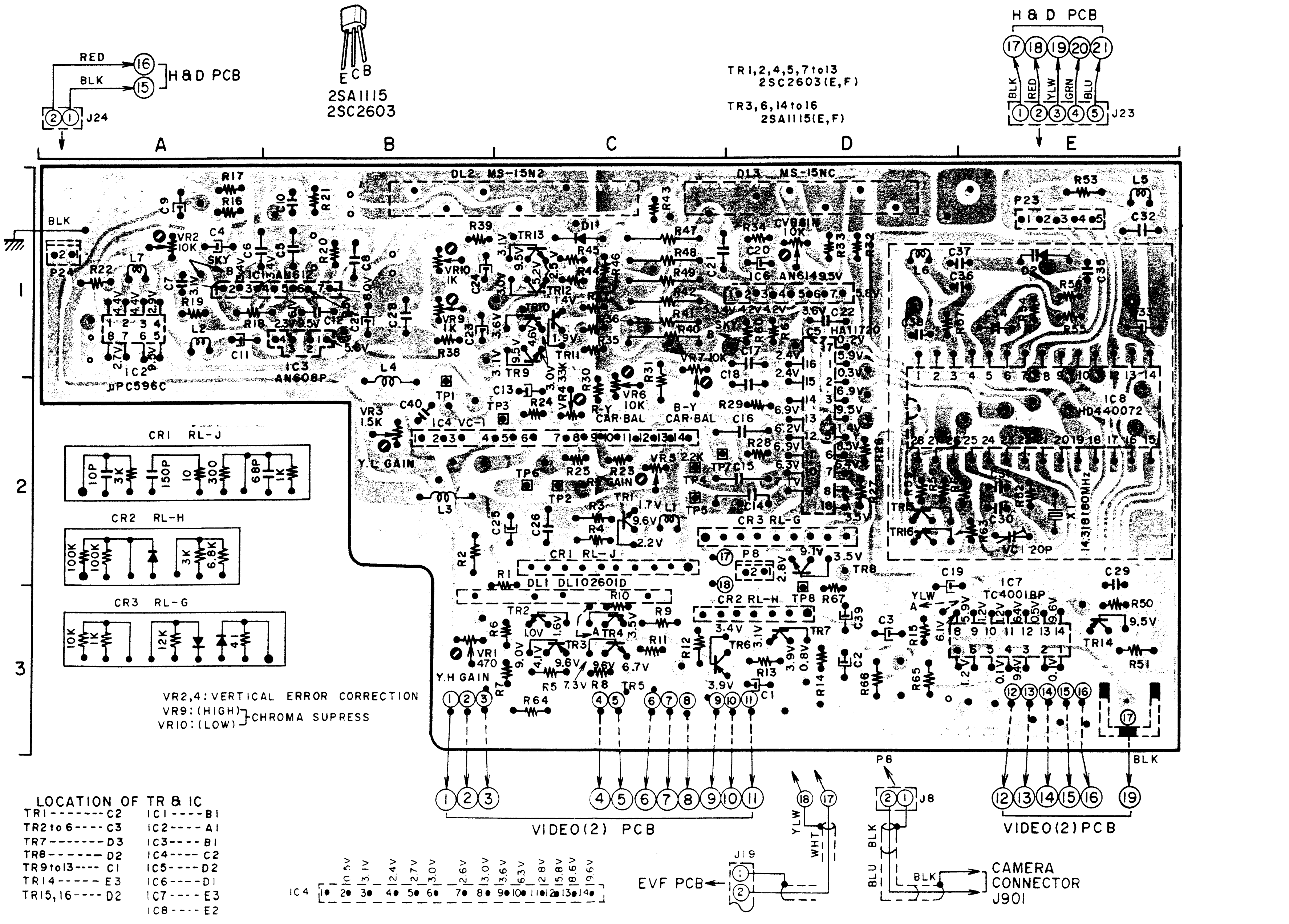
# VII. CLASSIFICATION OF VARIOUS P.C BOARDS

## 1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

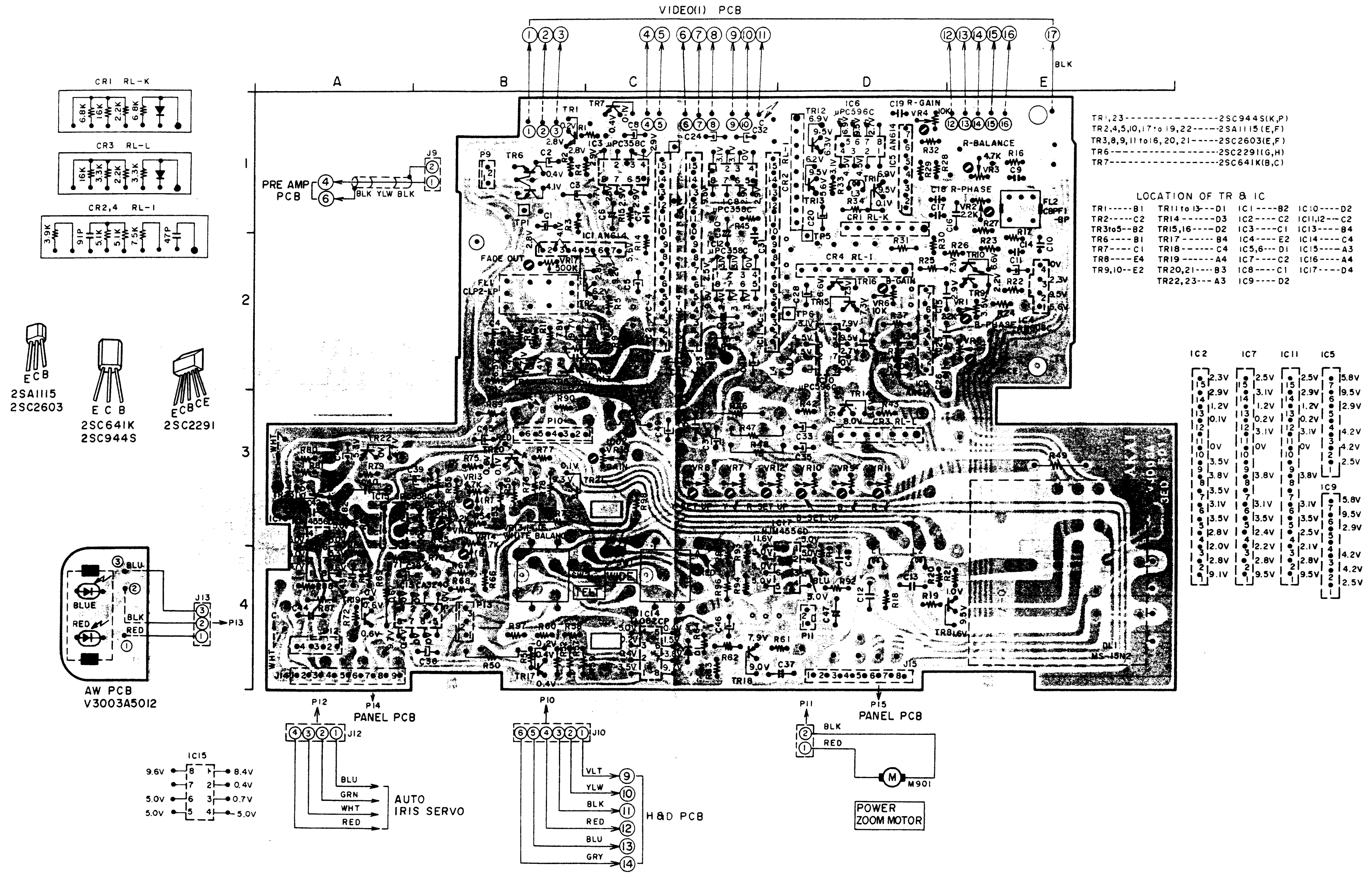
| P.C Board Title | P.C Board Number |
|---|---|
| Video (1) P.C Board | V3003A5010 |
| Video (2) P.C Board | V3003A5011 |
| AW P.C Board | V3003A5012 |
| Pre Amp P.C Board | V3003A5013 |
| H & D P.C Board | V3003B5030 |
| Socket P.C Board | V3003B5031 |
| EVF P.C Board | V3003C5040 |
| Panel P.C Board | V3003C5021 |
| Rec P.C Board | V3003D5022 |

2. COMPOSITION OF VARIOUS P.C BOARDS

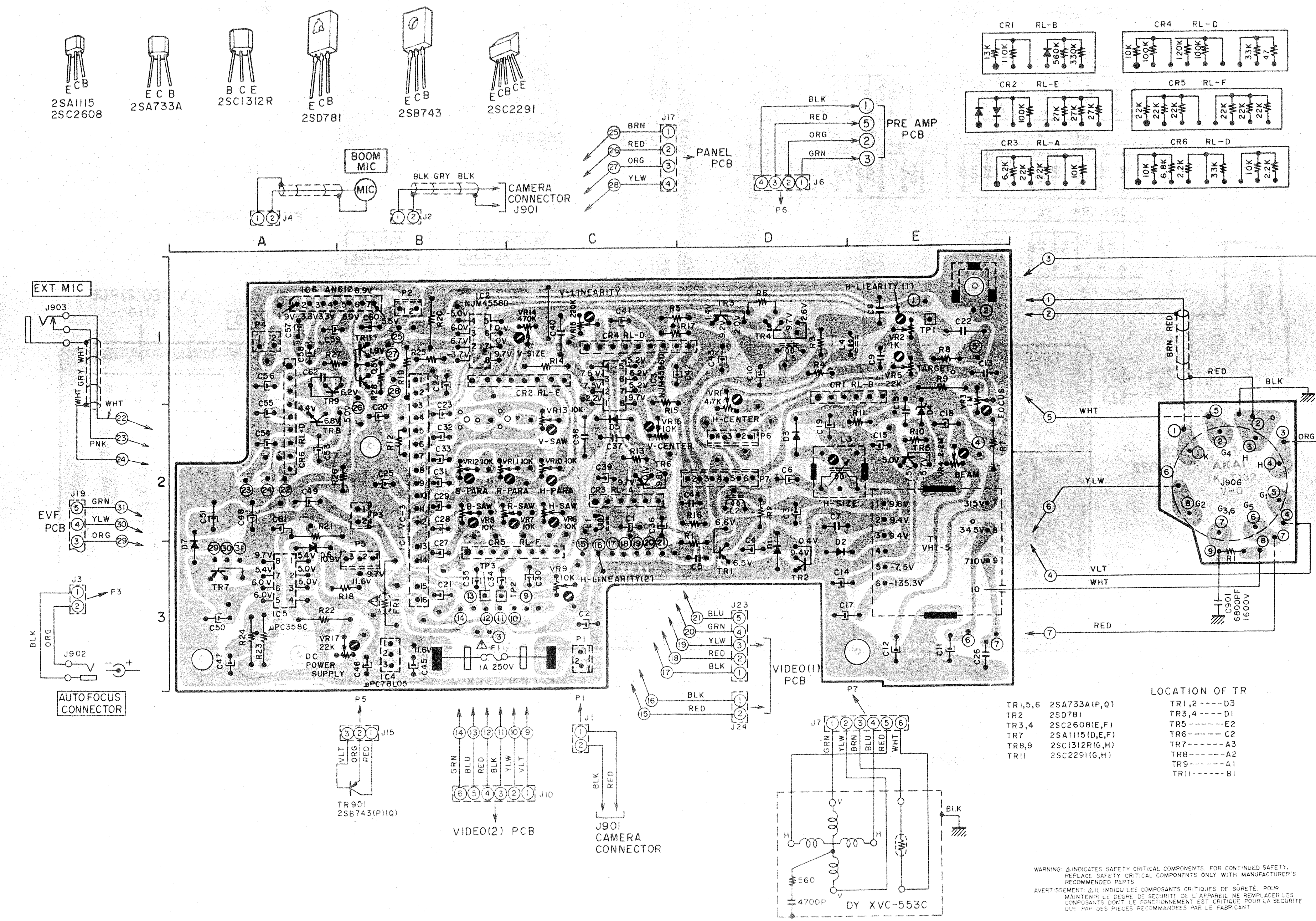
1) VIDEO (1) P.C BOARD V3003A5010 (2ED)



## 2) VIDEO (2) P.C BOARD V3003A5011 (3ED) and AW P.C BOARD V3003A5012



### 3) H & D P.C BOARD V3003B5030 and SOCKET P.C BOARD V3003B5031




| | |
|---|---|
| TR1,5,6 | 2SA733A(P,Q) |
| TR2 | 2SD781 |
| TR3,4 | 2SC2608(E,F) |
| TR7 | 2SA1115(D,E,F) |
| TR8,9 | 2SC1312R(G,H) |
| TR11 | 2SC2291(G,H) |

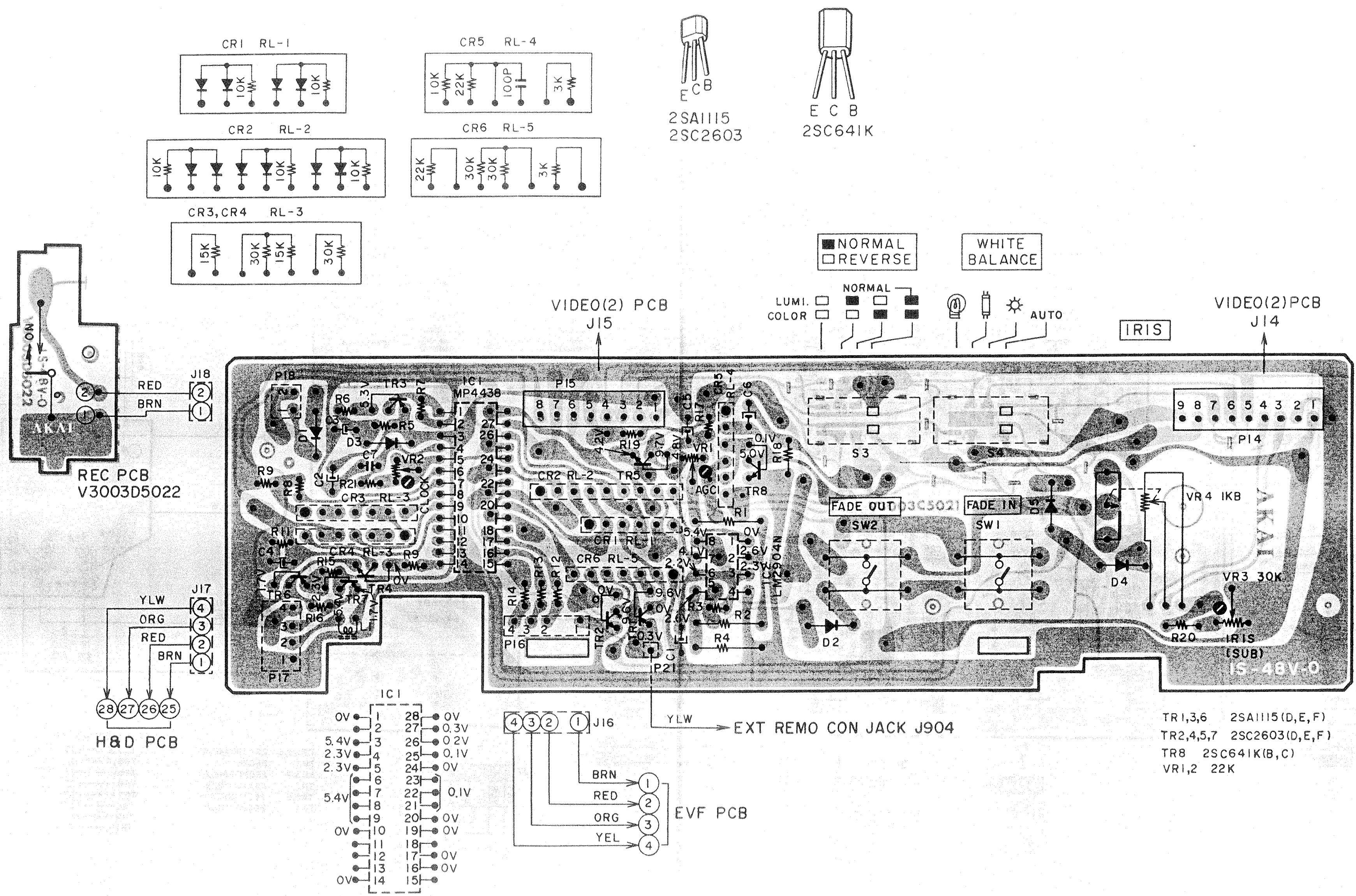
LOCATION OF TR

TR1,2 ----D3
TR3,4 ----D1
TR5 ------E2
TR6 ------C2
TR7 ------A3
TR8 ------A2
TR9 ------A1
TR11 ------B1

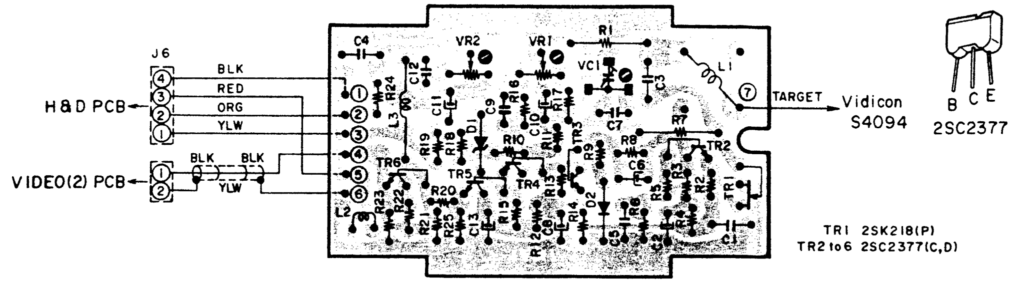
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

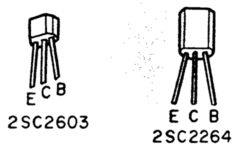
4) PANEL P.C BOARD V3003C5021 and REC P.C BOARD V3003D5022

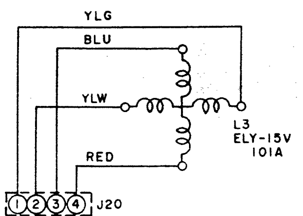


## 5) PRE AMP P.C BOARD V3003A5013

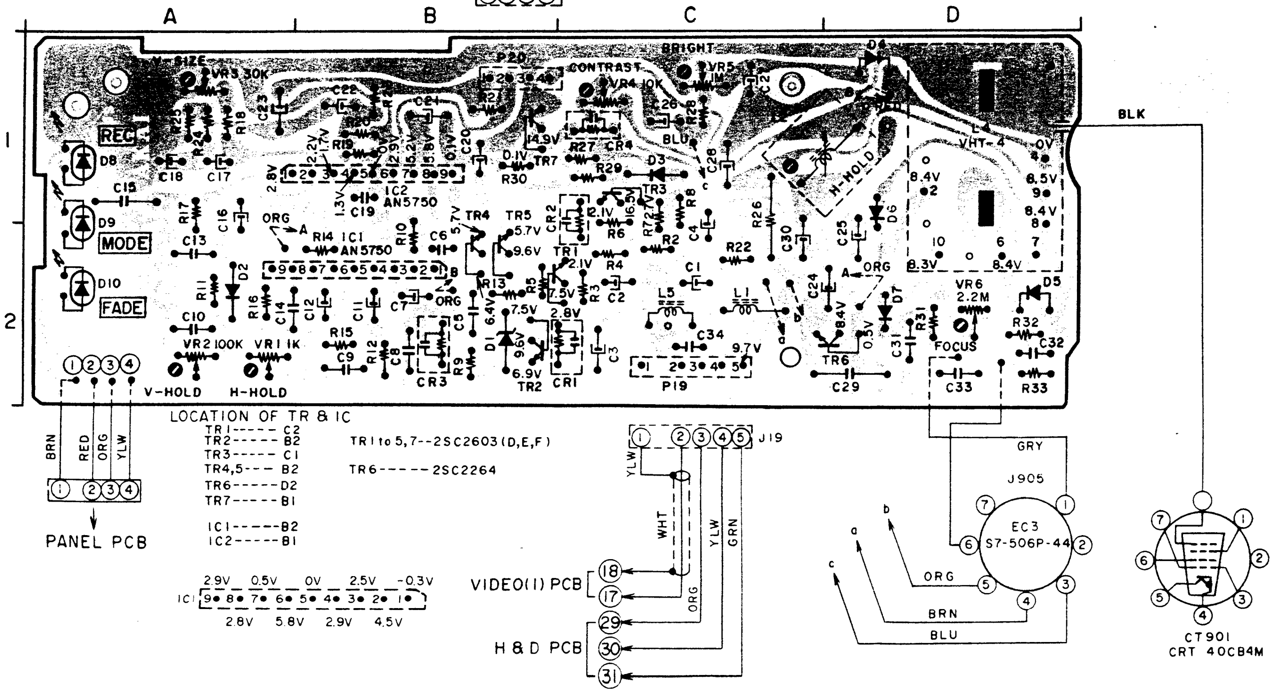



## 6) EVF P.C BOARD V3003C5040




WARNING: THIS CHASSIS CONTAINS COMPONENTS CRITICAL FOR X-RADIATION SAFETY.
FOR CONTINUED X-RADIATION SAFETY PLEASE REPLACE WITH A COMPONENT OF THE SAME TYPE.



MEMO

SECTION 2

# PARTS LIST

## TABLE OF CONTENTS



Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

## HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List

— The reference number corresponds with illustration or photo number of that particular parts list.

—— This number corresponds with the Figure Number.

—— This number corresponds with the individual parts index number in that figure.

—— A small "x" indicates the inability to show that particular part in the Photo or Illustration.

**12-115x**

| Ref. No. | Parts No. | Description |
|---|---|---|
| | | **FLYWHEEL BLOCK #13** |
| 12-115x | 800425 | Flywheel Block Assy. Comp. |
| 12-116 | 244506 | Flywheel Only |
| 12-117x | 244754 | Felt, Flywheel |
| 12-118 | 251324 | Main Metal Case |
| 12-119 | 253080 | Main Metal |

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION: 1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.



## 1. RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1-1 | BM307613 | MOTOR T16056-M0827Y |
| 1-2 | ED201967 | D LED LN26RP RED |
| 1-3 | ED201968 | D LED LN36BP GRN |
| 1-4 | ED201969 | D LED LN46YP ORG |
| 1-5 | ED301911 | D SILICON H DS448 |
| 1-6 | ED200212 | D SILICON H DS448F×2 F07 |
| 1-7 | ED522472 | D SILICON HF-1Z 200/0.6A |
| 1-8 | ED309859 | D SILICON RH-1S 600/0.2A |
| 1-9 | ED523618 | D SILICON SF-1-8 800/0.2A |
| 1-10 | ED200468 | D SILICON V DS448 VB3 |
| 1-11 | ED307645 | D VARACTOR 1S2688 |
| 1-12 | ED310025 | D ZENER H HZ6L A2 |
| 1-13 | ED307752 | D ZENER H HZ6L B2 |
| 1-14 | ED307690 | D ZENER H HZ7L A1 |
| 1-15 | EF318608 | ⚠ FUSE GGS A 250V 1A (C,A) |
| 1-16 | EF309387 | ⚠ FUSE TSC A 250V 1A (J) |
| 1-17 | EI300069 | DL DL102601D-221 |
| 1-18 | EI300149 | DL MS-15 (N2-A) |
| 1-19 | EI300150 | DL MS-15 (N2-B) |
| 1-20 | EI200556 | DL MS-15N-C |
| 1-21 | EI201970 | IC AN5750 |
| 1-22 | EI201972 | IC AN5760 |
| 1-23 | EI307616 | IC AN608P |
| 1-24 | EI300128 | IC AN612 |
| 1-25 | EI300141 | IC AN614 |
| 1-26 | EI307672 | IC CA3240E |
| 1-27 | EI300121 | IC HA11720 |
| 1-28 | EI300130 | IC HD440072 |
| 1-29 | EI201966 | IC LM2904 |
| 1-30 | EI201963 | IC MP4438 |
| 1-31 | EI307644 | IC NJM4556D |
| 1-32 | EI213390 | IC NJM4558D |
| 1-33 | EI313797 | IC TC4001BP |
| 1-34 | EI324255 | IC TL082CP |
| 1-35 | EI311392 | IC μPC358C |
| 1-36 | EI307617 | IC μPC596C |
| 1-37 | EI310031 | IC μPC78L05 |
| 1-38 | EI307618 | IC VC-1 |
| 1-39 | EI307715 | IC VC-3 |
| 1-40 | EI307619 | IC VC-4 |
| 1-41 | EI300840 | OSC X'TAL HC-18/U 14.318180MHZ |
| 1-42 | EJ310203 | CONNECTOR HEC-0630-01-020 |
| 1-43 | EJ307403 | DIN J TCS817-060 L 7P |
| 1-44 | EJ307693 | PHONE J 2P HSJ0289-050 2.5 |
| 1-45 | EO301916 | ⚠ COIL DEF. VIDICON XVC-553C |
| 1-46 | EO301630 | COIL CA.TV FLYBACK VHT-4 |
| 1-47 | EO311396 | COIL DEF VIDICON ELY-15V101A |
| 1-48 | ER307628 | ⚠ R FUSE FN19 1/4W 220J |
| 1-49 | ER301631 | FILTER LC BP CBPF1 3.80MHZ |
| 1-50 | ER301914 | FILTER LC LP CLPF3 |
| 1-51 | ES307659 | SW SLIDE MSS-P-2-4 |
| 1-52 | ES300122 | SW TACT EVQ-QBR08K |
| 1-53 | ES307404 | SW TACT KHC10014 |
| 1-54 | ET307630 | TR FET 2SK218 P |
| 1-55 | ET200479 | TR 2SA1115 D,E,F |
| 1-56 | ET200558 | TR 2SA11115 E,F |
| 1-57 | ET554657 | TR 2SA733A P,Q |
| 1-58 | ET330427 | TR 2SB772 E,P |
| 1-59 | ET517263 | TR 2SC1312R G,H |
| 1-60 | ET305468 | TR 2SC2264 |
| 1-61 | ET313560 | TR 2SC2291 G,H |
| 1-62 | ET330526 | TR 2SC2377 C,D |
| 1-63 | ET200480 | TR 2SC2603 D,E,F |
| 1-64 | ET200505 | TR 2SC2603 E,F |
| 1-65 | ET330429 | TR 2SC641K B,C |
| 1-66 | ET304710 | TR 2SC944S K,P |
| 1-67 | ET307571 | TR 2SD781 |
| 1-68 | EU307635 | ⚠ CRT 40CB4M |
| 1-69 | EU307614 | ⚠ IMAGE-T VIDICON S4094 |
| 1-70 | EV201964 | VR ROTARY 16W10S0A B102 |
| 1-71 | VCB307660 | LENS J6×11-14 IG AF |
| 1-72 | VC307615 | MIC EMU-4628A 2.00K |

## 2. VIDEO (1) P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 2-1 | BAV3003A230A | VIDEO PC (1) BLK VC-X1U |
| 2-IC1 | EI300128 | IC AN612 |
| 2-IC2 | EI307617 | IC μPC596C |
| 2-IC3 | EI307616 | IC AN608P |
| 2-IC4 | EI307618 | IC VC-1 |
| 2-IC5 | EI300121 | IC HA11720 |
| 2-IC6 | EI300141 | IC AN614 |
| 2-IC7 | EI313797 | IC TC4001BP |
| 2-IC8 | EI300130 | IC HD440072 |
| 2-TR1,2 | ET200505 | TR 2SC2603 E,F |
| 2-TR3 | ET200558 | TR 2SA1115 E,F |
| 2-TR4,5 | ET200505 | TR 2SC2603 E,F |
| 2-TR6 | ET200558 | TR 2SA1115 E,F |
| 2-TR7to13 | ET200505 | TR 2SC2603 E,F |
| 2-TR14to16 | ET200479 | TR 2SA1115 D,E,F |
| 2-D1 | ED200468 | D SILICON V DS448 VB3 |
| 2-D2 | ED307645 | D VARACTOR 1S2688 |
| 2-VC1 | EV300073 | C S-FIX H CTW13D117 5.0-20 |
| 2-VR1 | EV307706 | R S-FIX H H0651A 3P 0.05W 471 |
| 2-VR2 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 2-VR3 | EV330212 | R S-FIX H H0651A 3P 0.05W 152 |
| 2-VR4 | EV307705 | R S-FIX H H0651A 3P 0.05W 333 |
| 2-VR5 | EV307620 | R S-FIX H H0651A 3P 0.05W 222 |
| 2-VR6to8 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 2-VR9,10 | EV307653 | R S-FIX H H0651A 3P 0.05W 102 |
| 2-L1 | EO485278 | COIL FIX 1 FL05H 220μH K |
| 2-L2 | EO243966 | COIL FIX 1 FL05H 820μH K |
| 2-L3,4 | EO322395 | COIL FIX 1 EL0810SKI 100μH K |
| 2-L5 | EO357287 | COIL FIX 1 FL05H 100μH K |
| 2-L6 | EO307780 | COIL FIX 1 LF1 39μH J |
| 2-L7 | EO350763 | COIL FIX 1 FL05H 150μH K |
| 2-CR1 | ER307744 | COMP CR 10-0040 |
| 2-CR2 | ER302059 | COMP RD 08-0050 |
| 2-CR3 | ER302060 | COMP RD 08-0051 |
| 2-X1 | EI300840 | OSC X'TAL HC-18/U 14.318180MHZ |
| 2-DL1 | EI300069 | DL DL102601D-221 |
| 2-DL2 | EI300149 | DL MS-15 (N2-A) |
| 2-DL3 | EI200556 | DL MS-15N-C |
| 2-R40 | ER307757 | R MF H F10 1/4W 5111F |
| 2-R41 | ER307764 | R MF H F10 1/4W 2211F |
| 2-R42 | ER307754 | R MF H F10 1/4W 4321F |
| 2-R47 | ER307757 | R MF H F10 1/4W 5111F |
| 2-R48 | ER307764 | R MF H F10 1/4W 2211F |
| 2-R49 | ER307754 | R MF H F10 1/4W 4321F |
| 2-C34 | EC300193 | C EC V F05 NP SM 100M 16DC |

## 3. VIDEO (2) P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 3-1 | BAV3003A240A | VIDEO PC (2) BLK VC-X1U |
| 3-IC1 | EI300141 | IC AN614 |
| 3-IC2 | EI307619 | IC VC-4 |
| 3-IC3 | EI311392 | IC μPC358C |
| 3-IC4 | EI307616 | IC AN608P |
| 3-IC5 | EI300141 | IC AN614 |
| 3-IC6 | EI307617 | IC μPC596C |
| 3-IC7 | EI307619 | IC VC-4 |
| 3-IC8 | EI311392 | IC μPC358C |
| 3-IC9 | EI300141 | IC AN614 |
| 3-IC10 | EI307617 | IC μPC596C |
| 3-IC11 | EI307619 | IC VC-4 |
| 3-IC12 | EI311392 | IC μPC358C |
| 3-IC13 | EI307672 | IC CA3240E |
| 3-IC14 | EI324255 | IC TL082CP |
| 3-IC15 | EI311392 | IC μPC358C |
| 3-IC16 | EI307644 | IC NJM4556D |
| 3-IC17 | EI307644 | IC NJM4556D |
| 3-TR1 | ET304710 | TR 2SC944S K,P |
| 3-TR2 | ET200558 | TR 2SA1115 E,F |
| 3-TR3 | ET200505 | TR 2SC2603 E,F |
| 3-TR4,5 | ET200558 | TR 2SA1115 E,F |
| 3-TR6 | ET313560 | TR 2SC2291 G,H |
| 3-TR7 | ET330429 | TR 2SC641K B,C |
| 3-TR8,9 | ET200505 | TR 2SC2603 E,F |
| 3-TR10 | ET200558 | TR 2SA1115 E,F |
| 3-TR11to16 | ET200505 | TR 2SC2603 E,F |
| 3-TR17to19 | ET200558 | TR 2SA1115 E,F |
| 3-TR20,21 | ET200505 | TR 2SC2603 E,F |
| 3-TR22 | ET200558 | TR 2SA1115 E,F |
| 3-TR23 | ET304710 | TR 2SC944S K,P |
| 3-D1 | ED200468 | D SILICON V DS448 VB3 |
| 3-D2 | ED301911 | D SILICON H DS448 |
| 3-SW1,2 | ES300122 | SW TACT EVQ-QBR08K |
| 3-VR1,2 | EV307624 | R S-FIX H H0621A 3P 0.30W 222 |
| 3-VR3 | EV307694 | R S-FIX H H0651A 3P 0.05W 472 |
| 3-VR4 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 3-VR5 | EV307694 | R S-FIX H H0651A 3P 0.05W 472 |
| 3-VR6 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 3-VR7to12 | EV307624 | R S-FIX H H0621A 3P 0.30W 222 |
| 3-VR13,14 | EV307694 | R S-FIX H H0651A 3P 0.05W 472 |
| 3-VR15 | EV307695 | R S-FIX H H0651A 3P 0.05W 104 |
| 3-VR16 | EV307624 | R S-FIX H H0621A 3P 0.30W 222 |
| 3-VR17 | EV330364 | R S-FIX V EVN-B1A 3P 504 |
| 3-L1,2 | EO310075 | COIL FIX 1 FL05H 15μH K |
| 3-L3,4 | EO350763 | COIL FIX 1 FL05H 150μH K |
| 3-L5 | EO322395 | COIL FIX 1 EL0810SKI 100μH K |
| 3-FL1 | ER301914 | FILTER LC LP CLPF3 |
| 3-FL2 | ER301631 | FILTER LC BP CBPF1 3.80MHZ |
| 3-CR1 | EIB319178 | COMP RD 08-0065 PART |
| 3-CR2 | ER302061 | COMP CR 10-0038 |
| 3-CR3 | EIB319253 | COMP RD 08-0064 PART |
| 3-CR4 | ER302061 | COMP CR 10-0038 |
| 3-DL1 | EI300150 | DL MS-15 (N2-B) |
| 3-R46 | ER307758 | R MF H F10 1/4W 5621F |
| 3-R47 | ER330234 | R MF H F10 1/4W 3010F |
| 3-R48 | ER330235 | R MF H F10 1/4W 3650F |
| 3-R49 | ER307767 | R MF H F10 1/4W 2741F |
| 3-R50 | ER307730 | R MF H F10 1/4W 7502F |
| 3-R51 | ER307668 | R MF V 1/4W 1504F |
| 3-R69 | ER307768 | R MF H F10 1/4W 4323F |
| 3-R70 | ER307685 | R MF H 1/2W 4324G |
| 3-R71 | ER307685 | R MF H 1/2W 4324G |
| 3-R73 | ER307764 | R MF H F10 1/4W 2211F |
| 3-C6 | EC200948 | C EC V F05 NP SM 1R0M 50DC |
| 3-C22 | EC307684 | C EC V F05 NP SM R47M 50DC |
| 3-C30 | EC307684 | C EC V F05 NP SM R47M 50DC |
| 3-C37 | EC300193 | C EC V F05 NP SM 100M 16DC |
| 3-C44 | EC307793 | C EC V F05 NP SM 220M 10DC |
| 3-C47 | EC307793 | C EC V F05 NP SM 220M 10DC |



## 4. H & D P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 4-1 | BAV3003A210A | H & D PC BLK VC-X1U |
| 4-IC1 | EI307715 | IC VC-3 |
| 4-IC2 | EI213390 | IC NJM4558D |
| 4-IC3 | EI307644 | IC NJM4556D |
| 4-IC4 | EI310031 | IC μPC78L05 |
| 4-IC5 | EI311392 | IC μPC358C |
| 4-IC6 | EI300128 | IC AN612 |
| 4-TR1 | ET554657 | TR 2SA733A P,Q |
| 4-TR2 | ET307571 | TR 2SD781 |
| 4-TR3,4 | ET200505 | TR 2SC2603 E,F |
| 4-TR5,6 | ET554657 | TR 2SA733A P,Q |
| 4-TR7 | ET200479 | TR 2SA1115 D,E,F |
| 4-TR8,9 | ET517263 | TR 2SC1312R G,H |
| 4-TR11 | ET313560 | TR 2SC2291 G,H |
| 4-D1 | ED200468 | D SILICON V DS448 VB3 |
| 4-D2,3 | ED522472 | D SILICON HF-1Z 200/0.6A |
| 4-D4 | ED307752 | D ZENER H HZ6L B2 |
| 4-D5 | ED200468 | D SILICON V DS448 VB3 |
| 4-D6 | ED310025 | D ZENER H HZ6L A2 |
| 4-D7 | ED200468 | D SILICON V DS448 VB3 |
| 4-FR1 | ER307628 | R FUSE FN19 1/4W 220J |
| 4-VR1 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 4-VR2 | EV307653 | R S-FIX H H0651A 3P 0.05W 102 |
| 4-VR3 | EV307656 | R S-FIX V EVM-30G 3P 0.30W 105 |
| 4-VR4 | EV307637 | R S-FIX H H0651A 3P 0.05W 225 |
| 4-VR5 | EV307654 | R S-FIX H H0651A 3P 0.05W 224 |
| 4-VR6to13 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 4-VR14 | EV307652 | R S-FIX H H0621A 3P 0.30W 474 |
| 4-VR15 | EV307654 | R S-FIX H H0651A 3P 0.05W 224 |
| 4-VR16 | EV307621 | R S-FIX H H0651A 3P 0.05W 103 |
| 4-VR17 | EV307629 | R S-FIX H H0621A 3P 0.30W 223 |
| 4-L1,2 | EO357287 | COIL FIX 1 FL05H 100μH K |
| 4-L3 | EO307409 | COIL CA TV LINEARITY CANS-4668Z |
| 4-L4,5 | EO244012 | COIL FIX 1 FL09H 22MH J |
| 4-T1 | EO307646 | COIL CA, TV HIGH VOLT VHT-5 |
| 4-CR1 | ER302056 | COMP RD 08-0048 |
| 4-CR2 | ER307771 | COMP RD 08-0057 |
| 4-CR3 | ER307769 | COMP R 02-0045 |
| 4-CR4 | ER307770 | COMP R 02-0046 |
| 4-CR5 | ER302058 | COMP R 02-0041 |
| 4-CR6 | ER330220 | COMP R 02-0059 |
| 4-R9 | ER311423 | R MF H F10 1/4W 2004F |
| 4-R14 | ER311422 | R MF H F10 1/4W 1004F |
| 4-R19 | ER330304 | R MF H F10 1/4W 1102F |
| 4-R20 | ER307729 | R MF H F10 1/4W 1502F |
| 4-R21 | ER307756 | R MF H F10 1/4W 4752F |
| 4-R22 | ER307755 | R MF H F10 1/4W 3922F |
| 4-R23 | ER307759 | R MF H F10 1/4W 9091F |
| 4-R24 | ER307729 | R MF H F10 1/4W 1502F |
| 4-C7 | EC307778 | C PP V ECQ-P 4701G 100DC |
| 4-C11 | EC307407 | C EC V UHU1R0 450DC |
| 4-C12 | EC231568 | C EC V R5A 1R0 350DC |
| 4-C13 | EC307724 | C CE V E 472P 500DC |
| 4-C17to19 | EC201440 | C EC V F05 SL 1R0 160DC |
| 4-C22 | EC307648 | C MY V AMR 223M 400DC |
| 4-C26 | EC307722 | C CE V E 472Z 1000DC |

## 5. PRE AMP P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 5-1 | BAV3003A190A | PRE AMP PC BLK VC-X1U |
| 5-TR1 | ET307630 | TR FET 2SK218 P |
| 5-TR2to6 | ET330526 | TR 2SC2377 C,D |
| 5-D1 | ED307690 | D ZENER H HZ7L A1 |
| 5-D2 | ED301911 | D SILICON H DS448 |
| 5-VC1 | EC307634 | C S-FIX V ECV-1ZW10×60 |
| 5-VR1 | EV307633 | R S-FIX V EVN30C 3P 102 |
| 5-VR2 | EV307691 | R S-FIX V EVN30C 3P 202 |
| 5-L1 | EO307632 | COIL CA, TV PERSIVAL ELT-12R003 |
| 5-L2 | EO357287 | COIL FIX 1 FL05H 100μH K |
| 5-L3 | EO307751 | COIL FIX 1 LAL04KB 68μH J |
| 5-C3,4 | EC307692 | C MY V AMX 223K 100DC |
| 5-C7 | EC452665 | C MC V FM 200J 500DC |
| 5-C9 | EC307711 | C PP V APS 102J 100DC |
| 5-C12 | EC589680 | C MC V FM 180J 500DC |

## 6. PANEL P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 6-1 | BDV3003A260A | PANEL PC BLK VC-X1U |
| 6-IC1 | EI201963 | IC MP4438 |
| 6-IC2 | EI201966 | IC LM2904 |
| 6-TR1 | ET200479 | TR 2SA1115 D,E,F |
| 6-TR2 | ET200480 | TR 2SC2603 D,E,F |
| 6-TR3 | ET200479 | TR 2SA1115 D,E,F |
| 6-TR4,5 | ET200480 | TR 2SC2603 D,E,F |
| 6-TR6 | ET200479 | TR 2SA1115 D,E,F |
| 6-TR7 | ET200480 | TR 2SC2603 D,E,F |
| 6-TR8 | ET330429 | TR 2SC641K B,C |
| 6-TR9 | ET200479 | TR 2SA1115 D,E,F |
| 6-D1to5 | ED200212 | D SILICON H DS448F×2 F07 |
| 6-SW1,2 | ES307404 | SW TACT KHC10014 |
| 6-VR1 | EV307629 | R S-FIX H H0621A 3P 0.30W 223 |
| 6-VR2 | EV307709 | R S-FIX H H0651A 3P 0.05W 223 |
| 6-VR3 | EV307737 | R S-FIX H EVNB3AA00 3P 303 |
| 6-L1 | EO574187 | COIL FIX 1 FL05H 100μH M |
| 6-CR1 | ER307739 | COMP RD 08-0059 |
| 6-CR2 | ER307740 | COMP RD 08-0060 |
| 6-CR3,4 | ER307741 | COMP R 02-0052 |
| 6-CR5 | ER307742 | COMP CR 10-0042 |
| 6-CR6 | ER307743 | COMP R 02-0053 |
| 6-R1 | ER307756 | R MF H F10 1/4W 4752F |
| 6-R2 | ER307707 | R MF H F10 1/4W 2000F |
| 6-R4 | ER307781 | R MF H F10 1/4W 2002F |

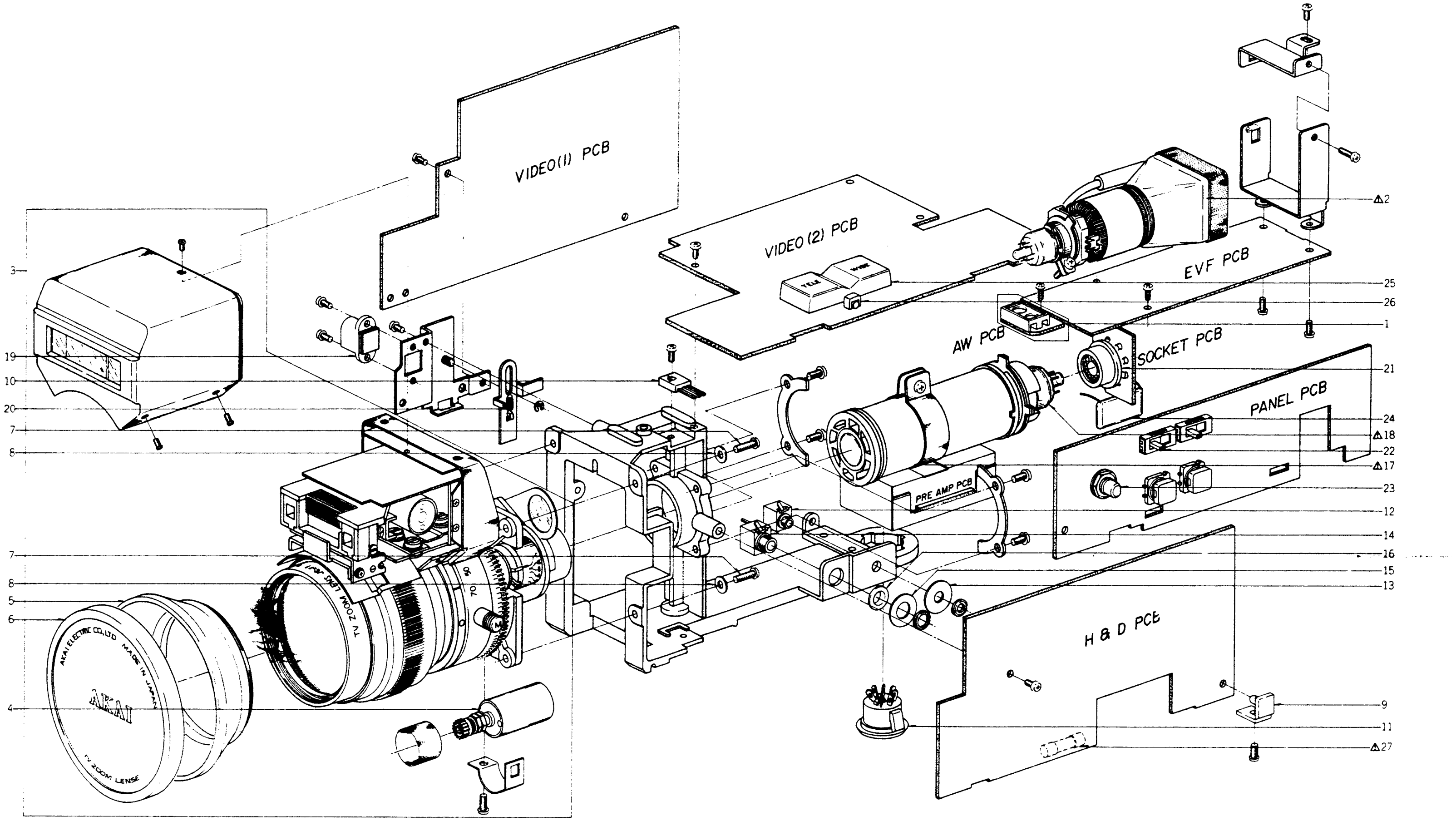
## 7. EVF P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 7-1 | BAV3003A110A | EVF PC BLK VC-X1U |
| 7-IC1 | EI201970 | IC AN5750 |
| 7-IC2 | EI201972 | IC AN5760 |
| 7-TR1to5 | ET200480 | TR 2SC2603 D,E,F |
| 7-TR6 | ET305468 | TR 2SC2264 |
| 7-TR7 | ET200480 | TR 2SC2603 D,E,F |
| 7-D1 | ED307690 | D ZENER H HZ7L A1 |
| 7-D2,3 | ED200212 | D SILICON H DS448Fx2 F07 |
| 7-D4to6 | ED309859 | D SILICON RH-1S 600/0.2A |
| 7-D7 | ED523618 | D SILICON SF-1-8 800/0.2A |
| 7-D8 | ED201967 | D LED LN26RP RED |
| 7-D9 | ED201968 | D LED LN36BP GRN |
| 7-D10 | ED201969 | D LED LN46YP ORG |
| 7-J905 | EJ311393 | SOCKET CRT SPECIAL-7P S7-506P-44 |
| 7-VR1 | EV522404 | R S-FIX V V8K1-1 3P 102 |
| 7-VR2 | EV522663 | R S-FIX V V8K1-1 3P 104 |
| 7-VR3 | EV555884 | R S-FIX V V8K1-1 3P 303 |
| 7-VR4 | EV475470 | R S-FIX V V8K1-1 3P 103 |
| 7-VR5 | EV522652 | R S-FIX V V8K1-1 3P 105 |
| 7-VR6 | EV307655 | R S-FIX H H0621A 3P 0.30W 225 |
| 7-L1 | EO322395 | COIL FIX 1 EL0810SKI 100μH K |
| 7-L2 | EO201965 | COIL CA. TV LINEARITY LCH-10 |
| 7-L3 | EO311396 | COIL DEF VIDICON ELY-15V101A |
| 7-L4 | EO301630 | COIL CA. TV FLYBACK VHT-4 |
| 7-L5 | EO321699 | COIL FIX 1 EL0810SKI 47μH J |
| 7-CR1,2 | EI309982 | COMP CR EXR-P221K-102C |
| 7-CR3 | EI309996 | COMP CR EXR-P101K-103C |
| 7-CR4 | EI318235 | COMP CR EXR-P100K-474C |
| 7-R26 | ER307749 | R CB H SNP FS RDS 1/4W 180J |
| 7-C17 | EC307773 | C TT V DA 2R2K 10DC |
| 7-C18 | EC307772 | C TT V D 4R7K 6.3DC |
| 7-C29 | EC307725 | C PP V ECQ-P 103J 100DC |
| 7-C31 | EC307722 | C CE V E 472Z 1000DC |
| 7-C32 | EC243617 | C MY V AMS 272J 200DC |
| 7-C33 | EC307650 | C CE V E 222Z 1000DC |

## 8. REC P.C BOARD BLOCK

| REF. NO. | PARTS NO | DESCRIPTION |
|---|---|---|
| 8-1 | BAV3003A060A | REC PC BLK VC-X1U |
| 8-J18 | EJ308102 | SOCKET HOUSING M62-02-6251SA 2P |
| 8-2 | EA307953B | PC REC |
| 8-3 | ZG307876 | SP PLATE REC |

## 9. ASSEMBLY BLOCK

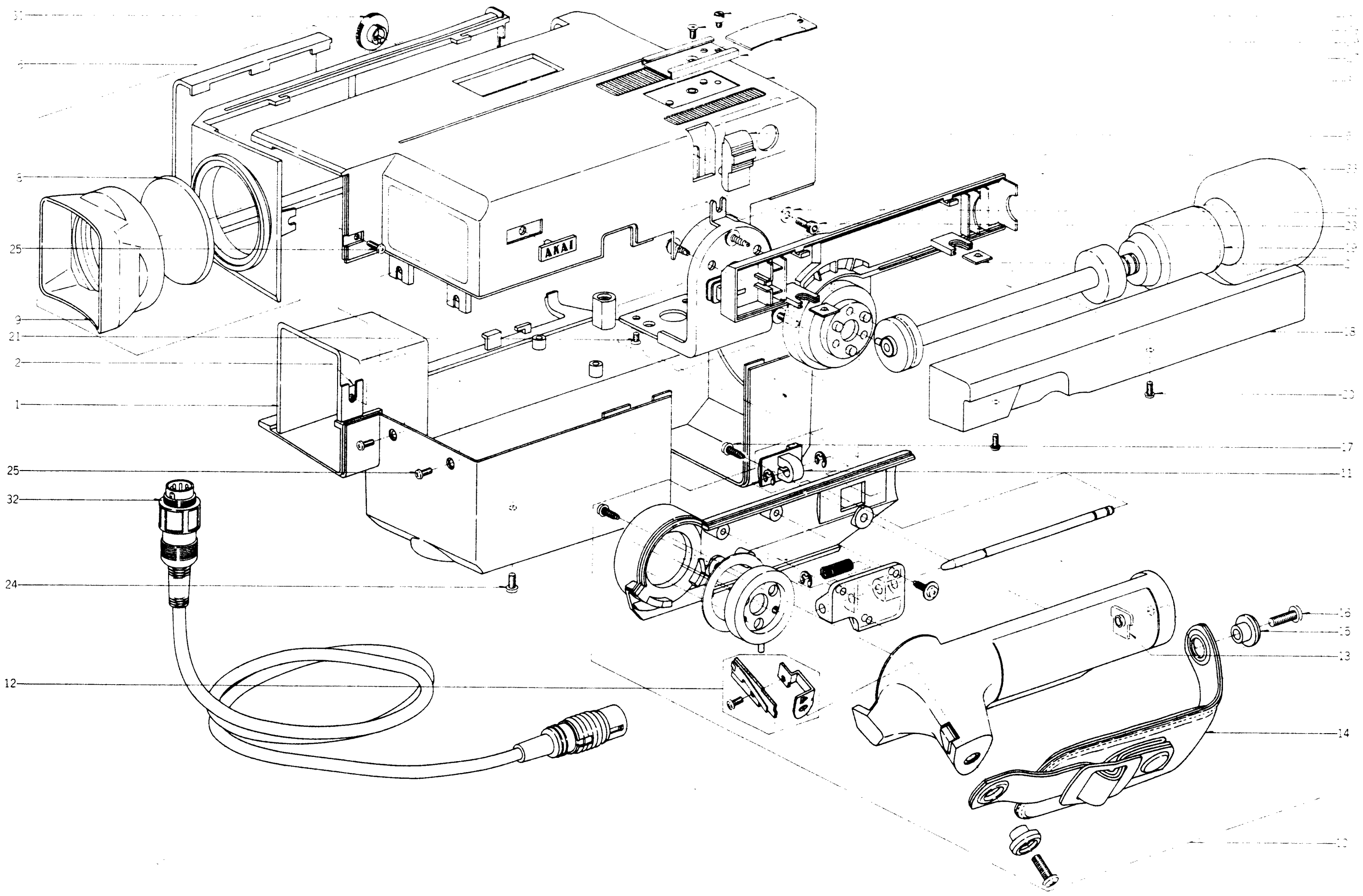



**ASSEMBLY BLOCK**

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | **AW BLK** | |
| 9-1 | BAV3003A050A | AW BLK VC-X1U |
| | **EVF BLK** | |
| 9-2 | EU307635 | ⚠ CRT 40CB4M |
| | **CHASSIS CAMERA BLK** | |
| 9-3 | VCB307660 | LENS J6x11-14 IG AF |
| 9-4 | BM307613 | ⚠ MOTOR T16056-M0827Y |
| 9-5 | VC780011 | HOOD LENS B12-2013-K101 |
| 9-6 | VC780010 | HOOD CAP B12-2013-K101 |
| 9-7 | ZS321537 | PLX PAN30x10STL CMT |
| 9-8 | ZW306464 | PW31x070x050STL CMT |
| 9-9 | VC307663 | HINGE TYPE (B) NO312 |
| 9-10 | ET330427 | TR 2SB772 E,P |
| | **CAMERA CONNECTOR BLK** | |
| 9-11 | EJ307403 | DIN J TCS817-060 L 7P |
| | **2P CONNECTOR BLK** | |
| 9-12 | EJ307693 | PHONE J 2P HSJ0289-050 2.5 |
| 9-13 | EJ328679A | PW JACK (1) |
| | **JACK BLK** | |
| 9-14 | EJ464995 | PHONE J 2P SJ296-1-15 3.5 |
| 9-15 | EJ328679B | PW JACK (2) |
| 9-16 | VT422537 | NYLON COLLAR FOR JACK D3.5 |
| | **IMAGE TUBE BLK** | |
| 9-17 | EO301916 | ⚠ COIL DEF. VIDICON XVC-553C |
| 9-18 | EU307614 | ⚠ IMAGE-T VIDICON S4094 |
| | **HOLDER ND BLK** | |
| 9-19 | EJ310203 | PLUG CONNECTOR EC0630-020 2P |
| 9-20 | ZG312944 | SP T1-3.2/0.29-12.5 T1-060 |
| | **PC SOCKET BLK** | |
| 9-21 | EJ311395 | SOCKET VIDICON MT-7P |
| | **PANEL BLK** | |
| 9-22 | ES307659 | SW SLIDE MSS-P-2-4 |
| 9-23 | EV201964 | VR ROTARY 16W10S0A B102 |
| | **ASSEMBLY BLK** | |
| 9-24 | EC307649 | C MMY V ECQ-E 682M1600DC |
| 9-25 | SK307883 | KNOB ZOOM |
| 9-26 | SK307878 | HOLDER KNOB ZOOM |
| 9-27 | EF318608 | ⚠ FUSE GGS A 250V 1A (C,A) |
| 9-28x | EF309387 | ⚠ FUSE TSC A 250V 1A (J) |

S8-612J-02 P

## 10. FINAL ASSEMBLY BLOCK




### FINAL ASSEMBLY BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | **CASE CAMERA (A) BLK** | |
| 10-1 | BC307895 | CASE CAMERA (A) |
| 10-2 | ZW307859 | NUT (A) |
| | **CASE CAMERA (B) BLK** | |
| 10-3 | BDV3003A120B | CASE CAMERA (B) BLK VC-X1U(C) (C,A) |
| 10-4x | BDV3003A120A | CASE CAMERA (B) BLK VC-X1U(J) |
| 10-5 | SK307884 | KNOB ND |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | **CASE CAMERA (C) BLK** | |
| 10-6 | BDV3003A130B | CASE CAMERA (C) BLK VC-X1U(C) (C,A) |
| 10-7x | BDV3003A130A | CASE CAMERA (C) BLK VC-X1U(J) |
| 10-8 | VC307661 | LENS EYE |
| 10-9 | VC307938 | HOOD EYECAP |
| | **CASE GRIP BLK** | |
| 10-10 | BDV3003A020A | CASE GRIP BLK VC-X1U |
| 10-11 | SK307886 | KNOB LOCK |
| 10-12 | VCV3003A050A | HOLDER REC BLK VC-X1U |
| 10-13 | ZW307872 | NUT (B) |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 10-14 | VC307942 | GRIP BAND |
| 10-15 | VC307887 | COLLAR GRIP BAND |
| 10-16 | ZS558090 | BID40x14STL BNI |
| 10-17 | ZS311098 | T2PAN30x10STL BNI |
| | **CASE MIC BLK** | |
| 10-18 | SP307899 | CASE MIC (B) |
| 10-19 | VC307615 | MIC EMU-4628A 2.00K |
| 10-20 | ZS307944 | PAN26x05STL BNI |
| | **FINAL ASSEMBLY BLK** | |
| 10-21 | ZS309374 | CTS26x08STL BNI |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 10-22 | ZS419938 | 6RB30x080SCM PKR R |
| 10-23 | ZW306464 | PW31x070x050STL CMT |
| 10-24 | ZS593908 | PAN30x06STL NI3 |
| 10-25 | ZS410231 | PAN26x05STL NI3 |
| 10-26x | ZS306001 | T2PAN26x08STL CMT |
| 10-27 | AX307863 | ACCS SHOE |
| 10-28 | ZS419850 | CTS26x05STL NI3 |
| 10-29 | ZG307864 | SP PLATE ACCS SHOE |
| 10-30 | ZS307865 | SCREW ACCS SHOE |
| 10-31 | SK307882 | KNOB IRIS |
| 10-32 | EW201962 | CAMERA CABLE 2993 |
| 10-33 | VC311418 | MIC WIND SCREW (LARGE) |

When ordering parts, please quote Parts Number, Description and Model Number.

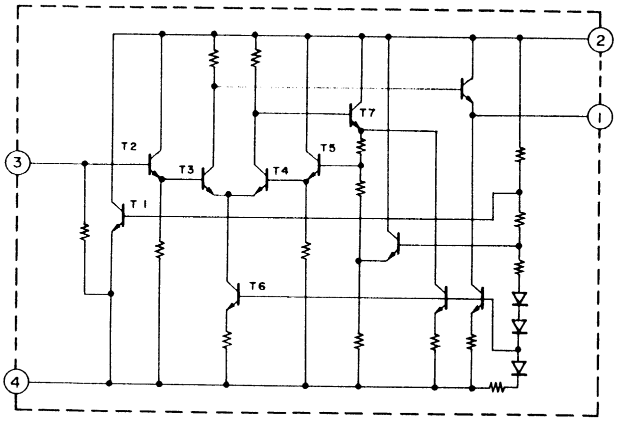
# INDEX

| PARTS NO. | REF. NO. | PARTS NO. | REF. NO. | PARTS NO. | REF. NO. | PARTS NO. | REF. NO. |
|---|---|---|---|---|---|---|---|
| AX307863 | 10-27 | EI300141 | 3-IC5 | ER307741 | 6-CR3,4 | EV307621 | 3-VR6 |
| BAV3003A060A | 8-1 | EI300141 | 3-IC9 | ER307742 | 6-CR5 | EV307621 | 4-VR16 |
| BAV3003A080A | 9-1 | EI300149 | 2-DL2 | ER307743 | 6-CR6 | EV307621 | 4-VR6to13 |
| BAV3003A110A | 7-1 | EI300150 | 3-DL1 | ER307744 | 2-CR1 | EV307621 | 4-VR1 |
| BAV3003A190A | 5-1 | EI300840 | 2-X1 | ER307749 | 7-R26 | EV307624 | 3-VR7to12 |
| BAV3003A210A | 4-1 | EI307616 | 2-IC3 | ER307754 | 2-R42 | EV307624 | 3-VR1,2 |
| BAV3003A230A | 2-1 | EI307616 | 3-IC4 | ER307754 | 2-R49 | EV307624 | 3-VR16 |
| BAV3003A240A | 3-1 | EI307617 | 2-IC2 | ER307755 | 4-R22 | EV307629 | 4-VR17 |
| BC307895 | 10-1 | EI307617 | 3-IC6 | ER307756 | 4-R21 | EV307629 | 6-VR1 |
| BDV3003A020A | 10-10 | EI307617 | 3-IC10 | ER307756 | 6-R1 | EV307633 | 5-VR1 |
| BDV3003A120A | 10-4x | EI307618 | 2-IC4 | ER307757 | 2-R40 | EV307637 | 4-VR4 |
| BDV3003A120B | 10-3 | EI307619 | 3-IC2 | ER307757 | 2-R47 | EV307652 | 4-VR14 |
| BDV3003A130A | 10-7x | EI307619 | 3-IC7 | ER307758 | 3-R46 | EV307653 | 2-VR9,10 |
| BDV3003A130B | 10-6 | EI307619 | 3-IC11 | ER307759 | 4-R23 | EV307653 | 4-VR2 |
| BDV3003A260A | 6-1 | EI307644 | 3-IC16 | ER307764 | 2-R41 | EV307654 | 4-VR15 |
| BM307613 | 9-4 | EI307644 | 3-IC17 | ER307764 | 2-R48 | EV307654 | 4-VR5 |
| EA307953B | 8-2 | EI307644 | 4-IC3 | ER307764 | 3-R73 | EV307655 | 7-VR6 |
| EC200948 | 3-C6 | EI307672 | 3-IC13 | ER307767 | 3-R49 | EV307656 | 4-VR3 |
| EC201440 | 4-C17to19 | EI307715 | 4-IC1 | ER307768 | 3-R69 | EV307691 | 5-VR2 |
| EC231568 | 4-C12 | EI309982 | 7-CR1,2 | ER307769 | 4-CR3 | EV307694 | 3-VR5 |
| EC243617 | 7-C32 | EI309996 | 7-CR3 | ER307770 | 4-CR4 | EV307694 | 3-VR13,14 |
| EC300193 | 2-C34 | EI310031 | 4-IC4 | ER307771 | 4-CR2 | EV307694 | 3-VR3 |
| EC300193 | 3-C37 | EI311392 | 3-IC3 | ER307781 | 6-R4 | EV307695 | 3-VR15 |
| EC307407 | 4-C11 | EI311392 | 3-IC8 | ER311422 | 4-R14 | EV307705 | 2-VR4 |
| EC307634 | 5-VC1 | EI311392 | 3-IC12 | ER311423 | 4-R9 | EV307706 | 2-VR1 |
| EC307648 | 4-C22 | EI311392 | 3-IC15 | ER330220 | 4-CR6 | EV307709 | 6-VR2 |
| EC307649 | 9-24 | EI311392 | 4-IC5 | ER330234 | 3-R47 | EV307737 | 6-VR3 |
| EC307650 | 7-C33 | EI313797 | 2-IC7 | ER330235 | 3-R48 | EV330212 | 2-VR3 |
| EC307684 | 3-C22 | EI318235 | 7-CR4 | ER330304 | 4-R19 | EV330364 | 3-VR17 |
| EC307684 | 3-C30 | EI324255 | 3-IC14 | ES300122 | 3-SW1,2 | EV475470 | 7-VR4 |
| EC307692 | 5-C3,4 | EJ307403 | 9-11 | ES307404 | 6-SW1,2 | EV522404 | 7-VR1 |
| EC307711 | 5-C9 | EJ307693 | 9-12 | ES307659 | 9-22 | EV522652 | 7-VR5 |
| EC307722 | 4-C26 | EJ308102 | 8-J18 | ET200479 | 2-TR14to16 | EV522663 | 7-VR2 |
| EC307722 | 7-C31 | EJ310203 | 9-19 | ET200479 | 4-TR7 | EV555884 | 7-VR3 |
| EC307724 | 4-C13 | EJ311393 | 7-J905 | ET200479 | 6-TR1 | EW201962 | 10-32 |
| EC307725 | 7-C29 | EJ311395 | 9-21 | ET200479 | 6-TR3 | SK307878 | 9-26 |
| EC307772 | 7-C18 | EJ328679A | 9-13 | ET200479 | 6-TR6 | SK307882 | 10-31 |
| EC307773 | 7-C17 | EJ328679B | 9-15 | ET200479 | 6-TR9 | SK307883 | 9-25 |
| EC307778 | 4-C7 | EJ464995 | 9-14 | ET200480 | 6-TR7 | SK307884 | 10-5 |
| EC307793 | 3-C44 | EO201965 | 7-L2 | ET200480 | 6-TR2 | SK307886 | 10-11 |
| EC307793 | 3-C47 | EO243966 | 2-L2 | ET200480 | 6-TR4,5 | SP307899 | 10-18 |
| EC452665 | 5-C7 | EO244012 | 4-L4,5 | ET200480 | 7-TR1to5 | VCB307660 | 9-3 |
| EC589680 | 5-C12 | EO301630 | 7-L4 | ET200480 | 7-TR7 | VCV3003A050A | 10-12 |
| ED200212 | 6-D1to5 | EO301916 | 9-17 | ET200505 | 2-TR4,5 | VC307615 | 10-19 |
| ED200212 | 7-D2,3 | EO307409 | 4-L3 | ET200505 | 2-TR1,2 | VC307661 | 10-8 |
| ED200468 | 2-D1 | EO307632 | 5-L1 | ET200505 | 2-TR7to13 | VC307663 | 9-9 |
| ED200468 | 3-D1 | EO307646 | 4-T1 | ET200505 | 3-TR8,9 | VC307887 | 10-15 |
| ED200468 | 4-D5 | EO307751 | 5-L3 | ET200505 | 3-TR11to16 | VC307938 | 10-9 |
| ED200468 | 4-D7 | EO307780 | 2-L6 | ET200505 | 3-TR20,21 | VC307942 | 10-14 |
| ED200468 | 4-D1 | EO310075 | 3-L1,2 | ET200505 | 3-TR3 | VC311418 | 10-33 |
| ED201967 | 7-D8 | EO311396 | 7-L3 | ET200505 | 4-TR3,4 | VC780010 | 9-6 |
| ED201968 | 7-D9 | EO321699 | 7-L5 | ET200558 | 2-TR3 | VC780011 | 9-5 |
| ED201969 | 7-D10 | EO322395 | 2-L3,4 | ET200558 | 2-TR6 | VT422537 | 9-16 |
| ED301911 | 3-D2 | EO322395 | 3-L5 | ET200558 | 3-TR10 | ZG307864 | 10-29 |
| ED301911 | 5-D2 | EO322395 | 7-L1 | ET200558 | 3-TR17to19 | ZG307876 | 8-3 |
| ED307645 | 2-D2 | EO350763 | 2-L7 | ET200558 | 3-TR22 | ZG312944 | 9-20 |
| ED307690 | 5-D1 | EO350763 | 3-L3,4 | ET200558 | 3-TR2 | ZS306001 | 10-26x |
| ED307690 | 7-D1 | EO357287 | 2-L5 | ET200558 | 3-TR4,5 | ZS307865 | 10-30 |
| ED307752 | 4-D4 | EO357287 | 4-L1,2 | ET304710 | 3-TR1 | ZS307944 | 10-20 |
| ED309859 | 7-D4to6 | EO357287 | 5-L2 | ET304710 | 3-TR23 | ZS309374 | 10-21 |
| ED310025 | 4-D6 | EO485278 | 2-L1 | ET305468 | 7-TR6 | ZS311098 | 10-17 |
| ED522472 | 4-D2,3 | EO574187 | 6-L1 | ET307571 | 4-TR2 | ZS321537 | 9-7 |
| ED523618 | 7-D7 | ER301631 | 3-FL2 | ET307630 | 5-TR1 | ZS410231 | 10-25 |
| EF309387 | 9-28x | ER301914 | 3-FL1 | ET313560 | 3-TR6 | ZS419850 | 10-28 |
| EF318608 | 9-27 | ER302056 | 4-CR1 | ET313560 | 4-TR11 | ZS419938 | 10-22 |
| EIB319178 | 3-CR1 | ER302058 | 4-CR5 | ET330427 | 9-10 | ZS558090 | 10-16 |
| EIB319253 | 3-CR3 | ER302059 | 2-CR2 | ET330429 | 3-TR7 | ZS593908 | 10-24 |
| EI200556 | 2-DL3 | ER302060 | 2-CR3 | ET330429 | 6-TR8 | ZW306464 | 9-8 |
| EI201963 | 6-IC1 | ER302061 | 3-CR2 | ET330526 | 5-TR2to6 | ZW306464 | 10-23 |
| EI201966 | 6-IC2 | ER302061 | 3-CR4 | ET517263 | 4-TR8,9 | ZW307859 | 10-2 |
| EI201970 | 7-IC1 | ER307628 | 4-FR1 | ET554657 | 4-TR1 | ZW307872 | 10-13 |
| EI201972 | 7-IC2 | ER307668 | 3-R51 | ET554657 | 4-TR5,6 | | |
| EI213390 | 4-IC2 | ER307685 | 3-R70 | EU307614 | 9-18 | | |
| EI300069 | 2-DL1 | ER307685 | 3-R71 | EU307635 | 9-2 | | |
| EI300121 | 2-IC5 | ER307707 | 6-R2 | EV201964 | 9-23 | | |
| EI300128 | 2-IC1 | ER307729 | 4-R20 | EV300073 | 2-VC1 | | |
| EI300128 | 4-IC6 | ER307729 | 4-R24 | EV307620 | 2-VR5 | | |
| EI300130 | 2-IC8 | ER307730 | 3-R50 | EV307621 | 2-VR2 | | |
| EI300141 | 2-IC6 | ER307739 | 6-CR1 | EV307621 | 2-VR6to8 | | |
| EI300141 | 3-IC1 | ER307740 | 6-CR2 | EV307621 | 3-VR4 | | |

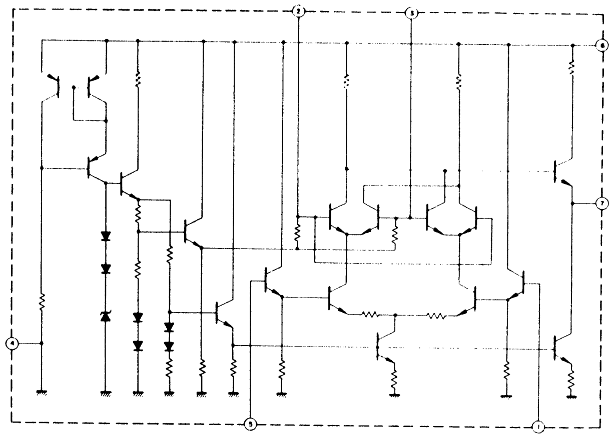
SECTION 3

# SCHEMATIC DIAGRAM

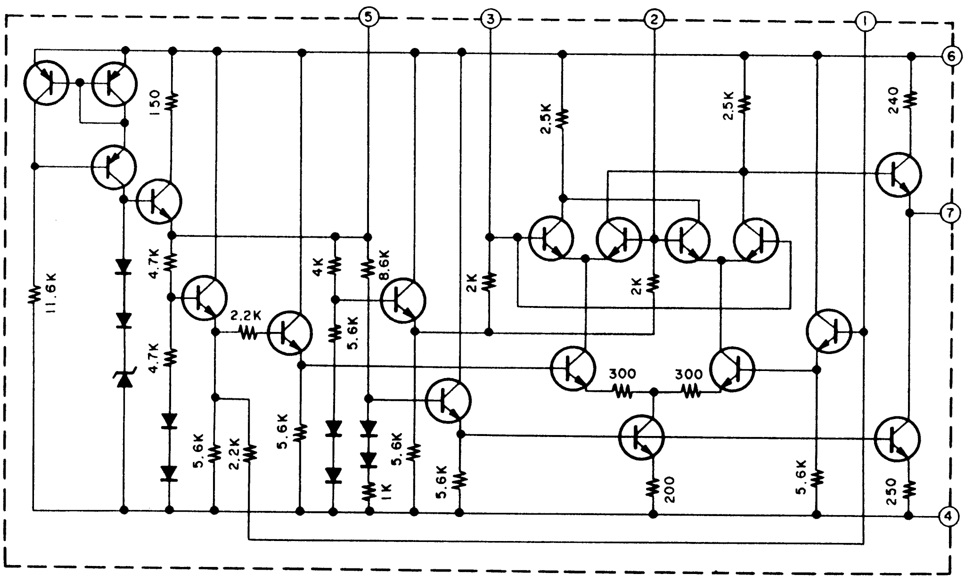
## AN608P



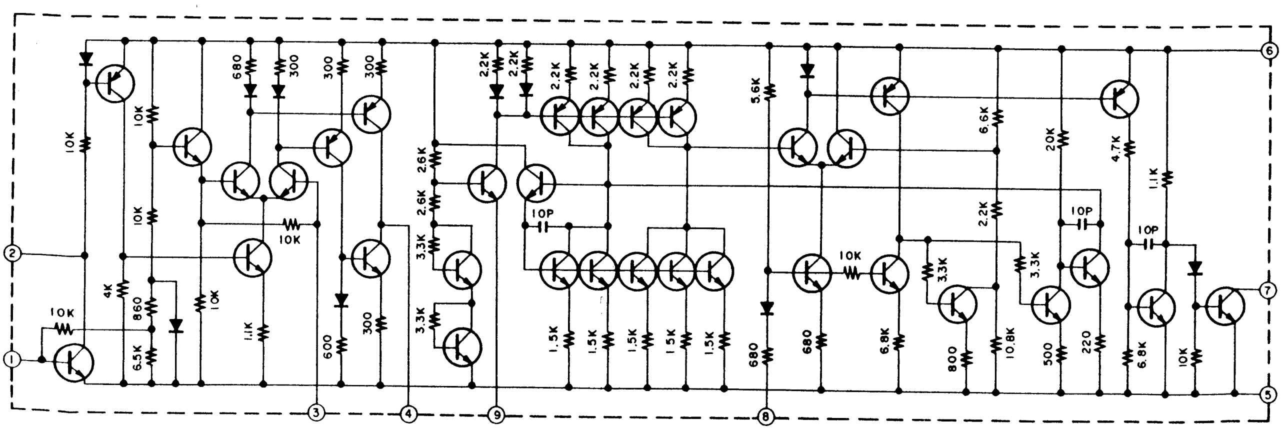

## AN614



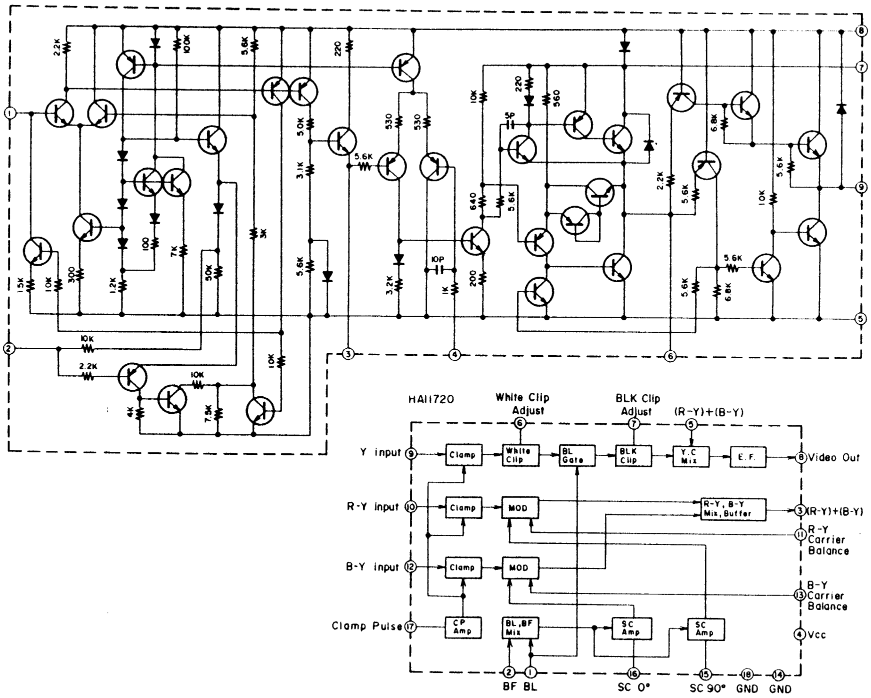
## AN612



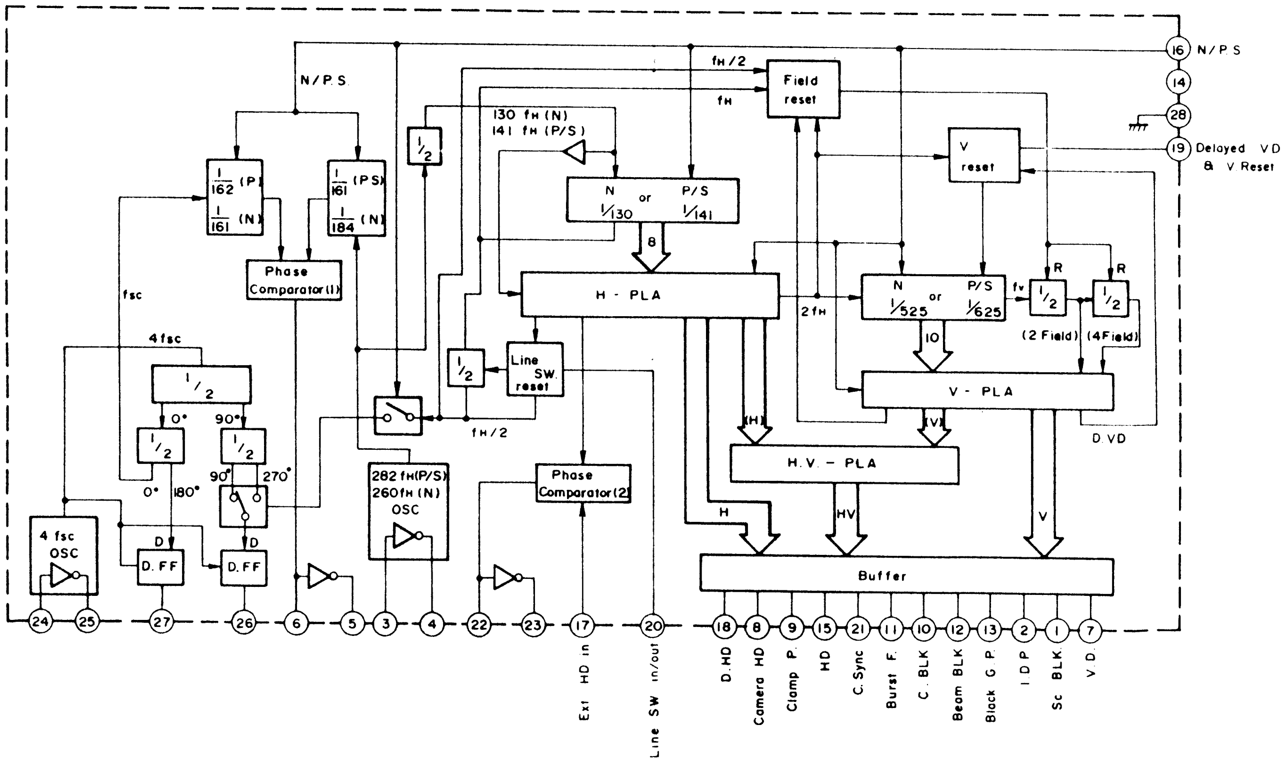

## AN5750



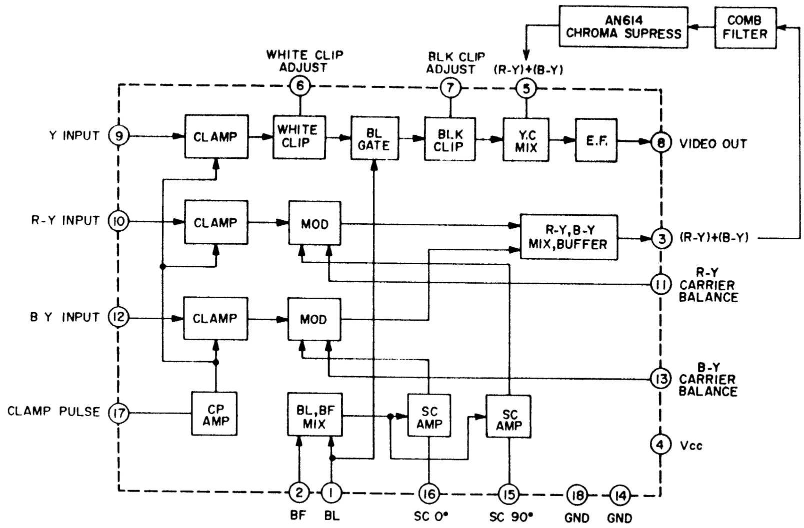
# AN5760



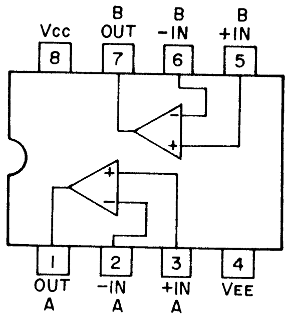

# HD440072



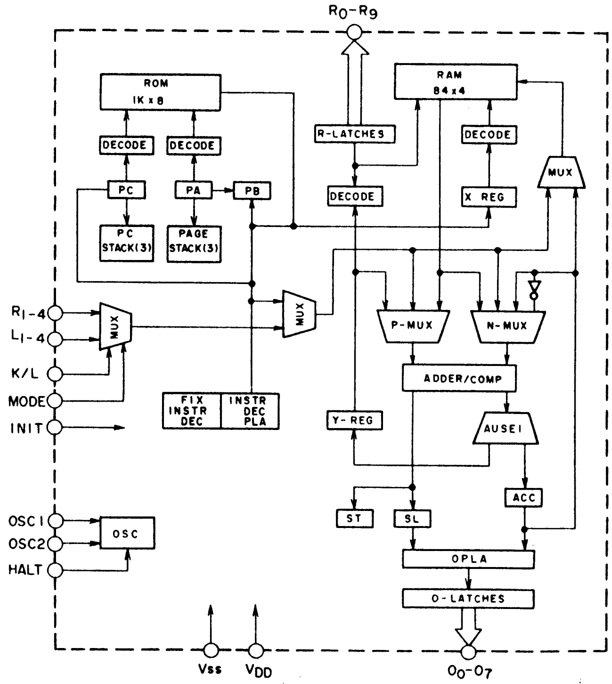
# HA11720



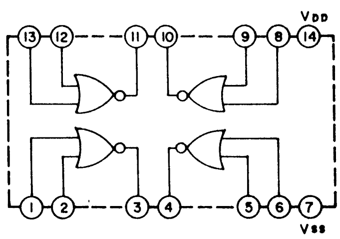

# NJM4556D/NJM4558D/NJM4560D/μPC358C/CA3240/TL082CP/LM2904N



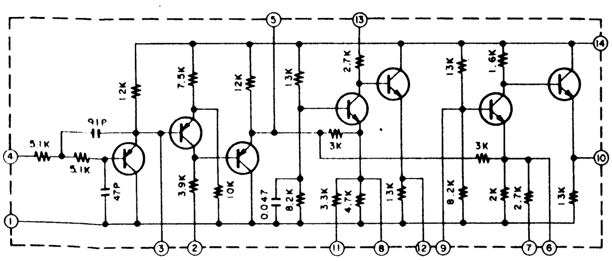

# MP4438



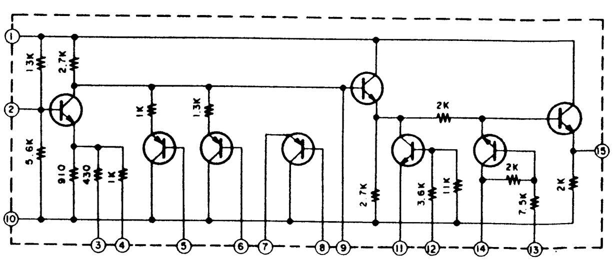

# TC4001BP



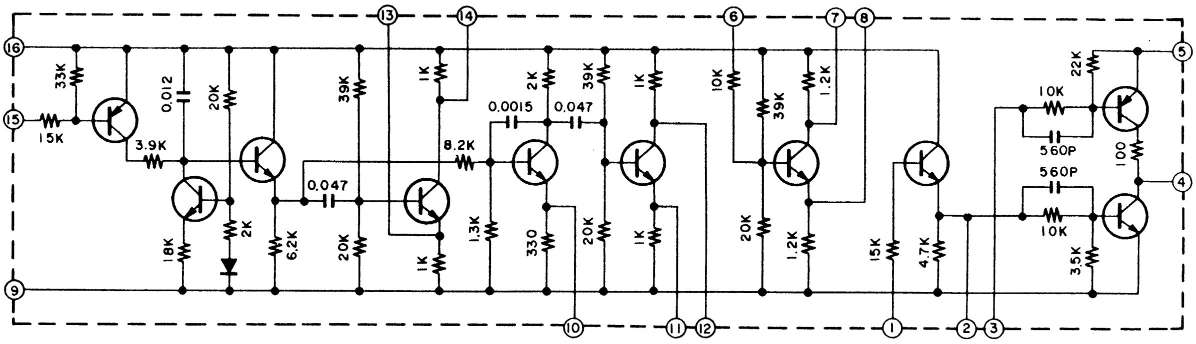

# VC-1



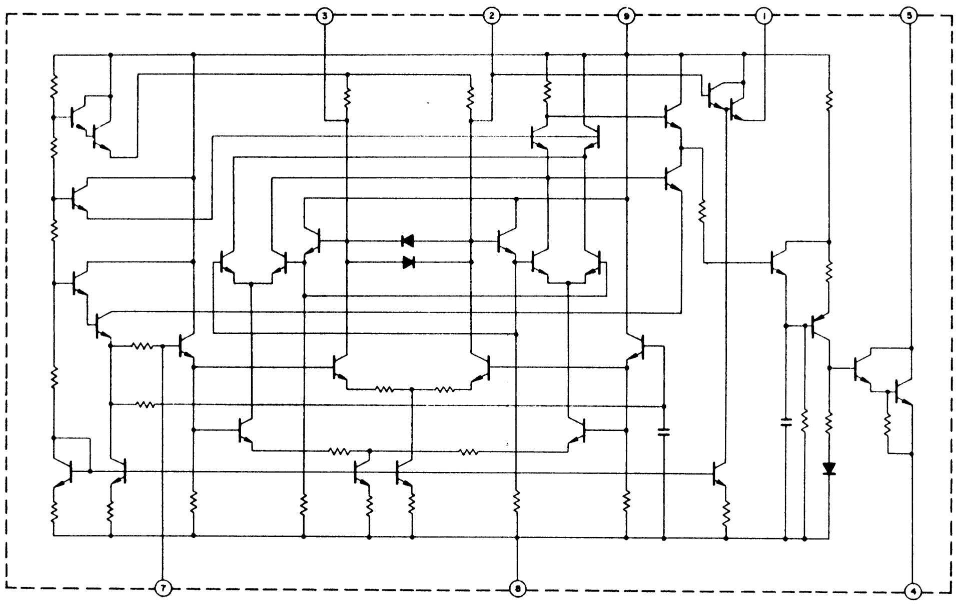
# VC-4



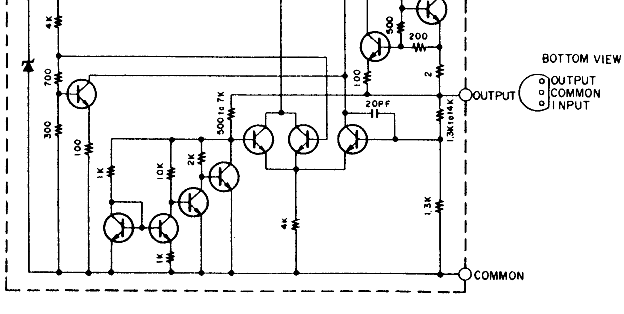
## VC-3

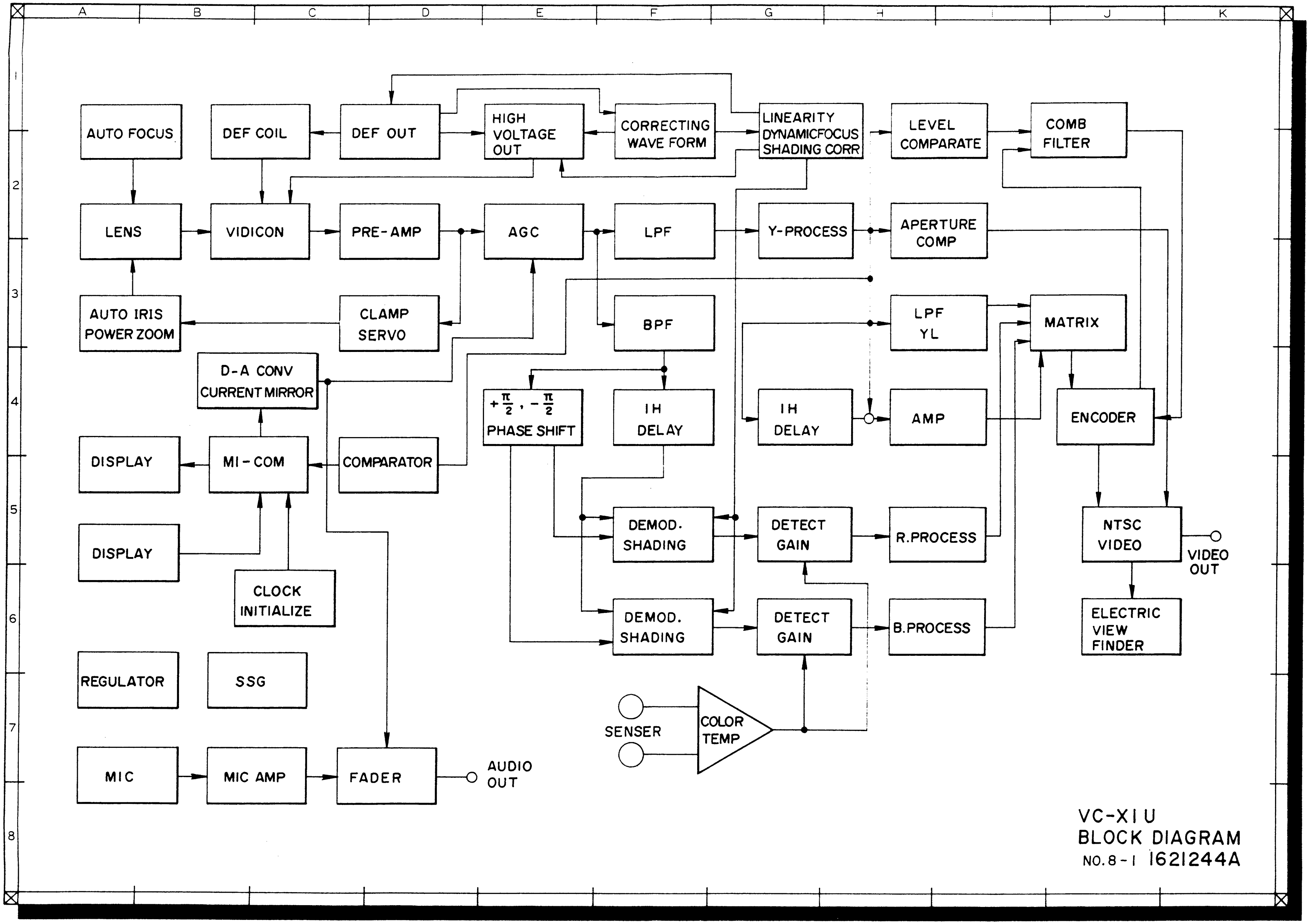



## μPC596C

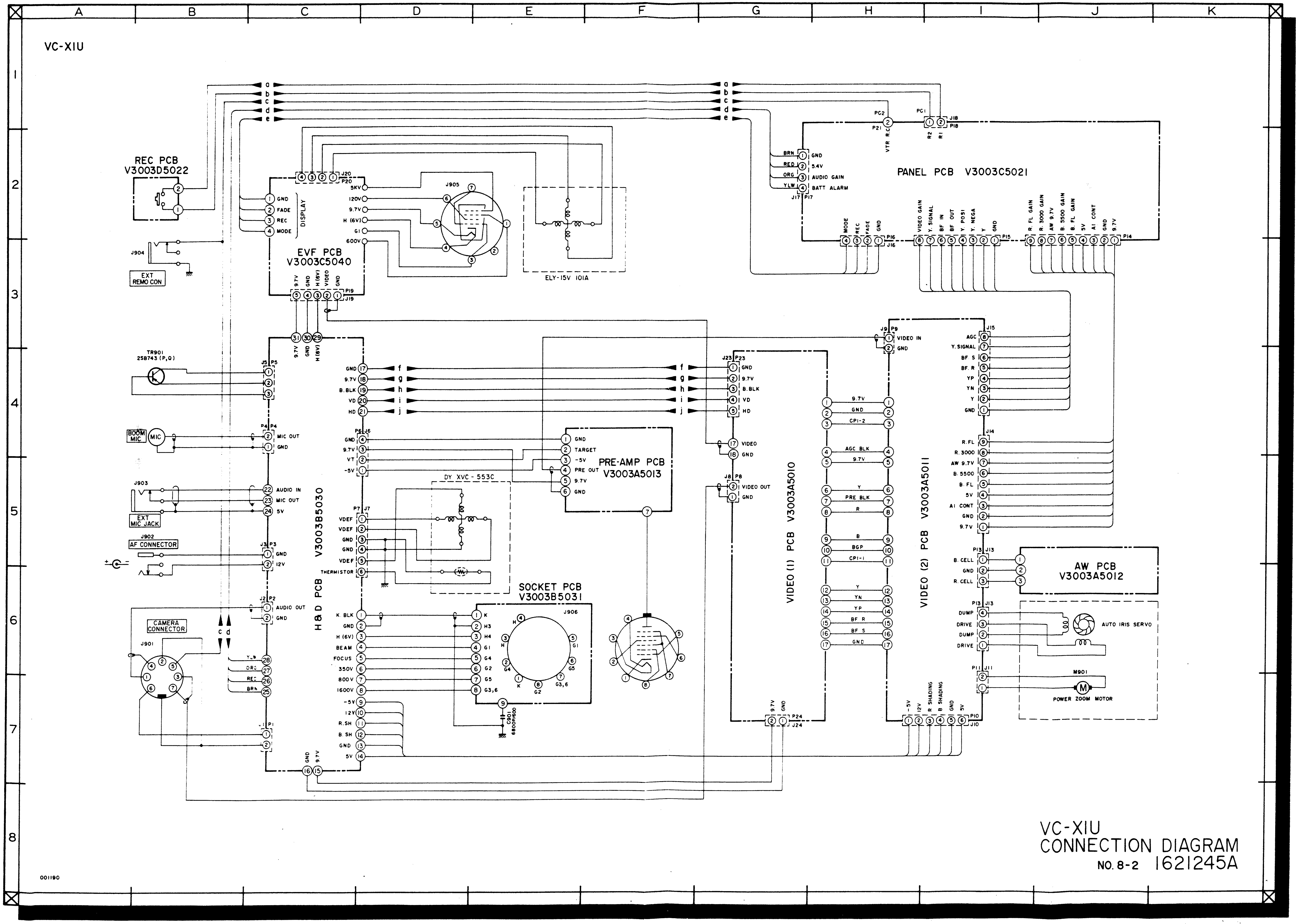


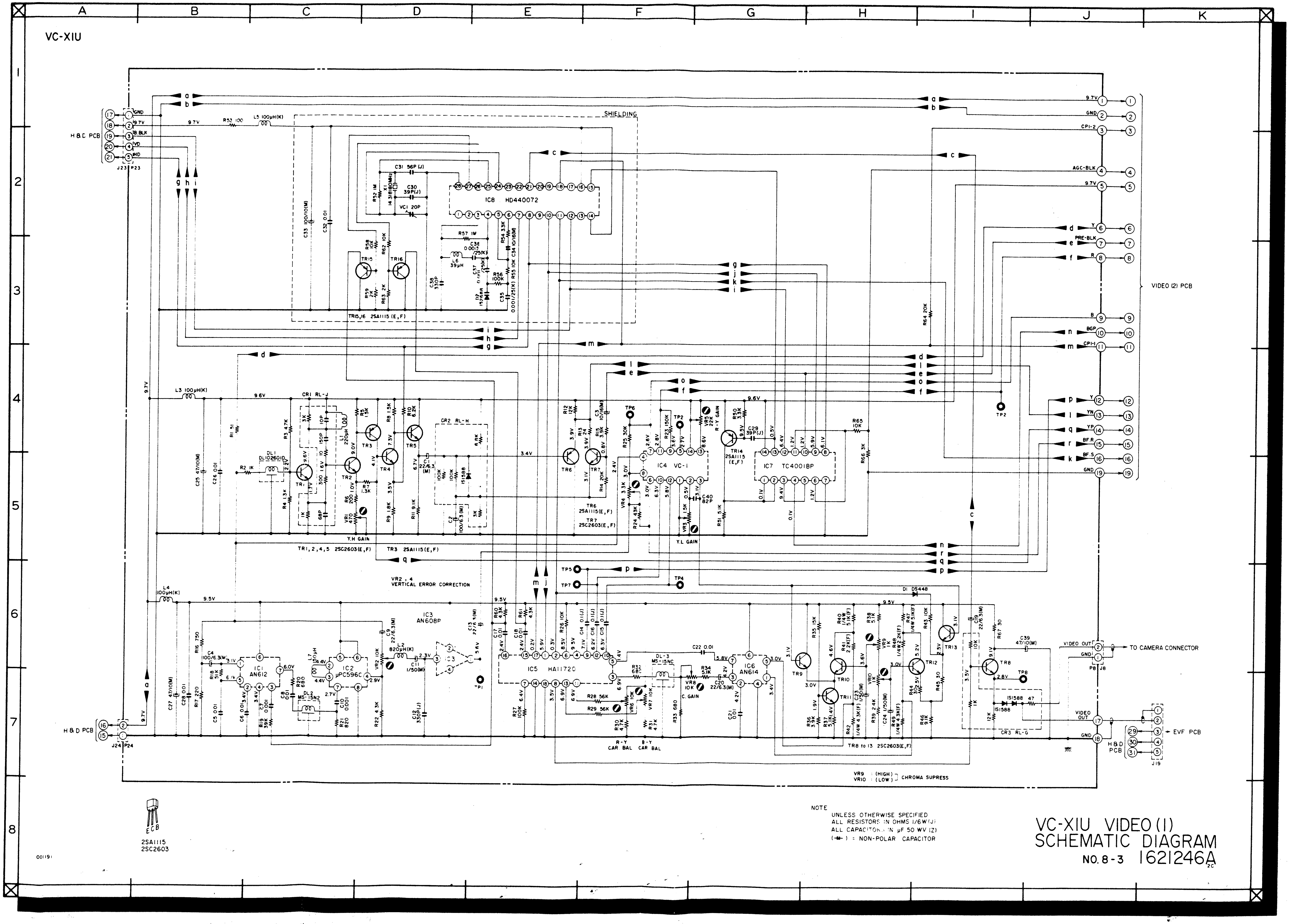
## μPC78L05






VC-X1U
BLOCK DIAGRAM
NO.8-1 1621244A


VC-XIU
REC PCB
V3003D5022
EVF PCB
V3003C5040
DISPLAY
ELY-15V 101A
J904
EXT REMO CON
PANEL PCB V3003C5021
TR901
2SB743 (P,Q)
BOOM MIC
MIC
J903
EXT MIC JACK
J902
AF CONNECTOR
CAMERA CONNECTOR
J901
H&D PCB V3003B5030
DY XVC-553C
PRE-AMP PCB
V3003A5013
SOCKET PCB
V3003B5031
J906
VIDEO (1) PCB V3003A5010
VIDEO (2) PCB V3003A5011
AW PCB
V3003A5012
AUTO IRIS SERVO
M901
POWER ZOOM MOTOR
C901
6800P600
001190
VC-XIU
CONNECTION DIAGRAM
NO. 8-2 1621245A

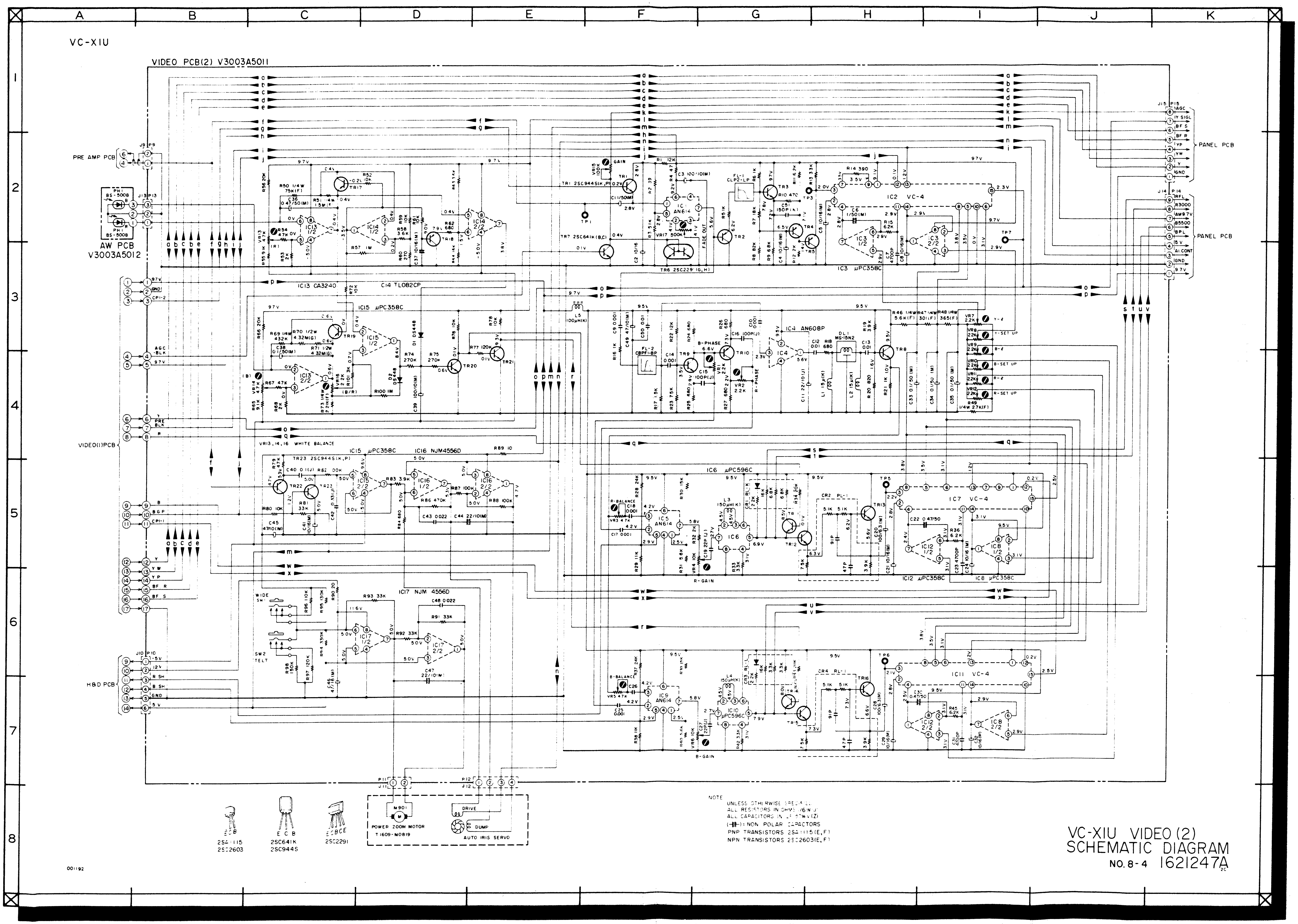


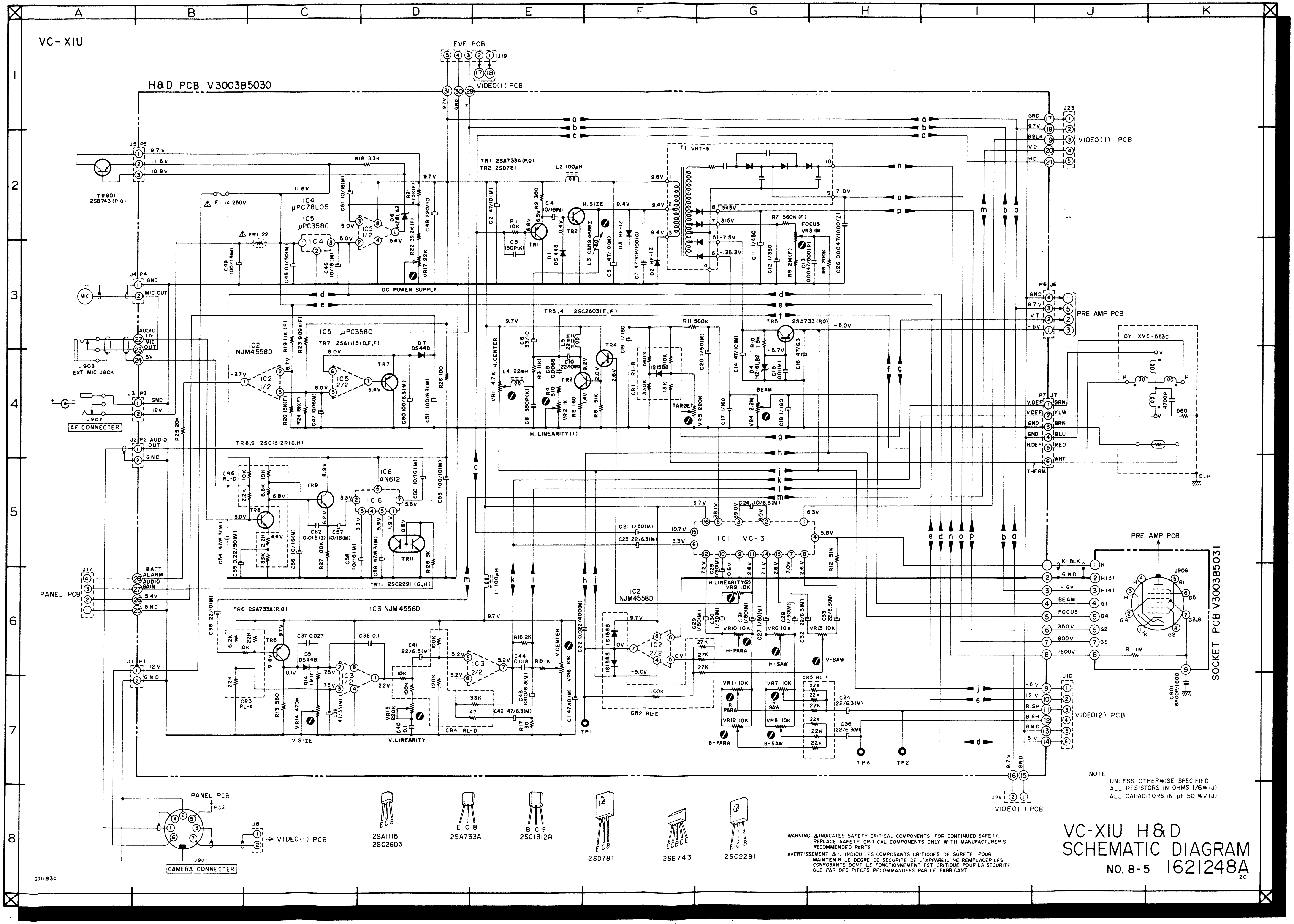

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50 WV (Z)
(⊣⊢) : NON-POLAR CAPACITOR

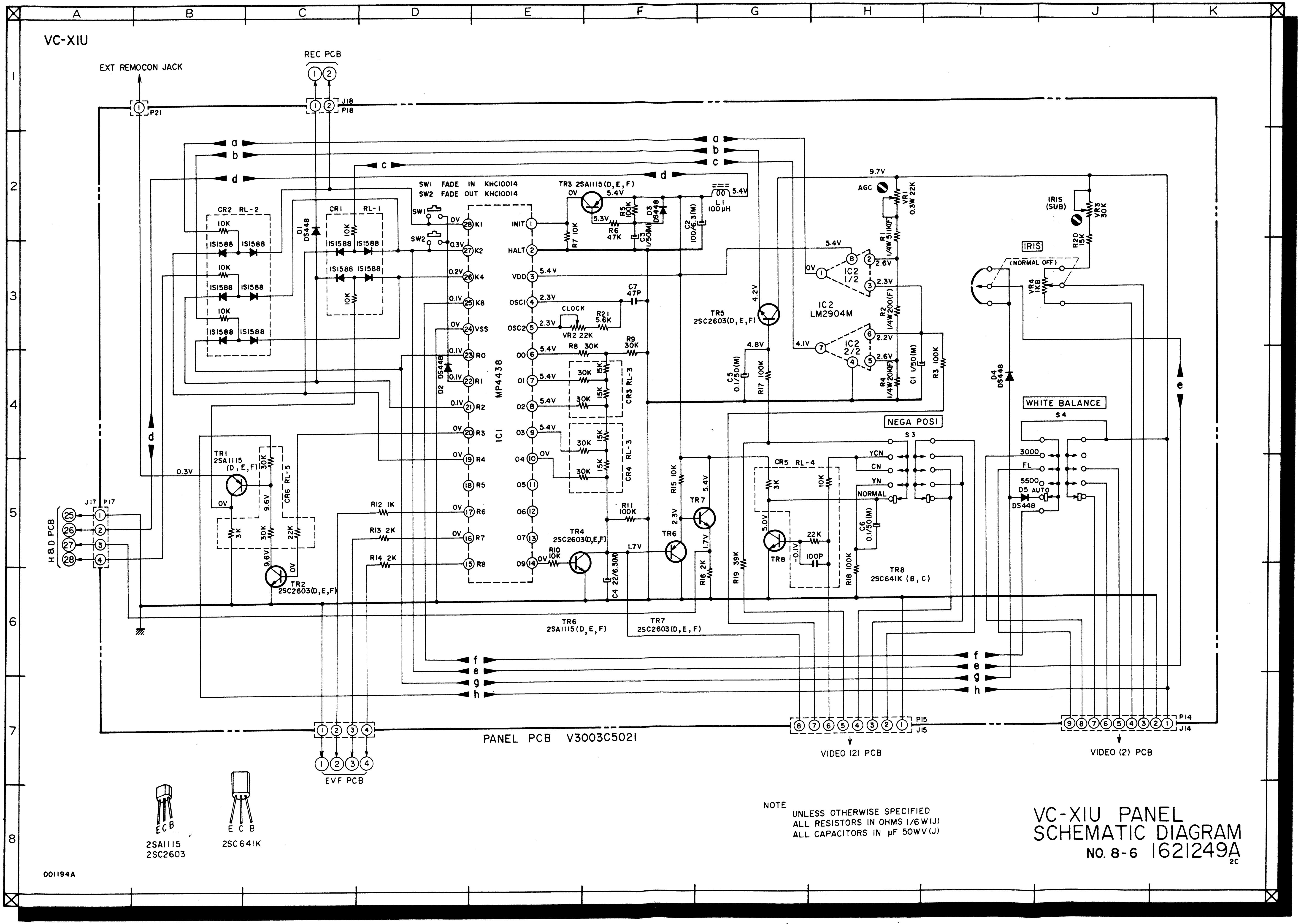
# VC-X1U VIDEO (1) SCHEMATIC DIAGRAM

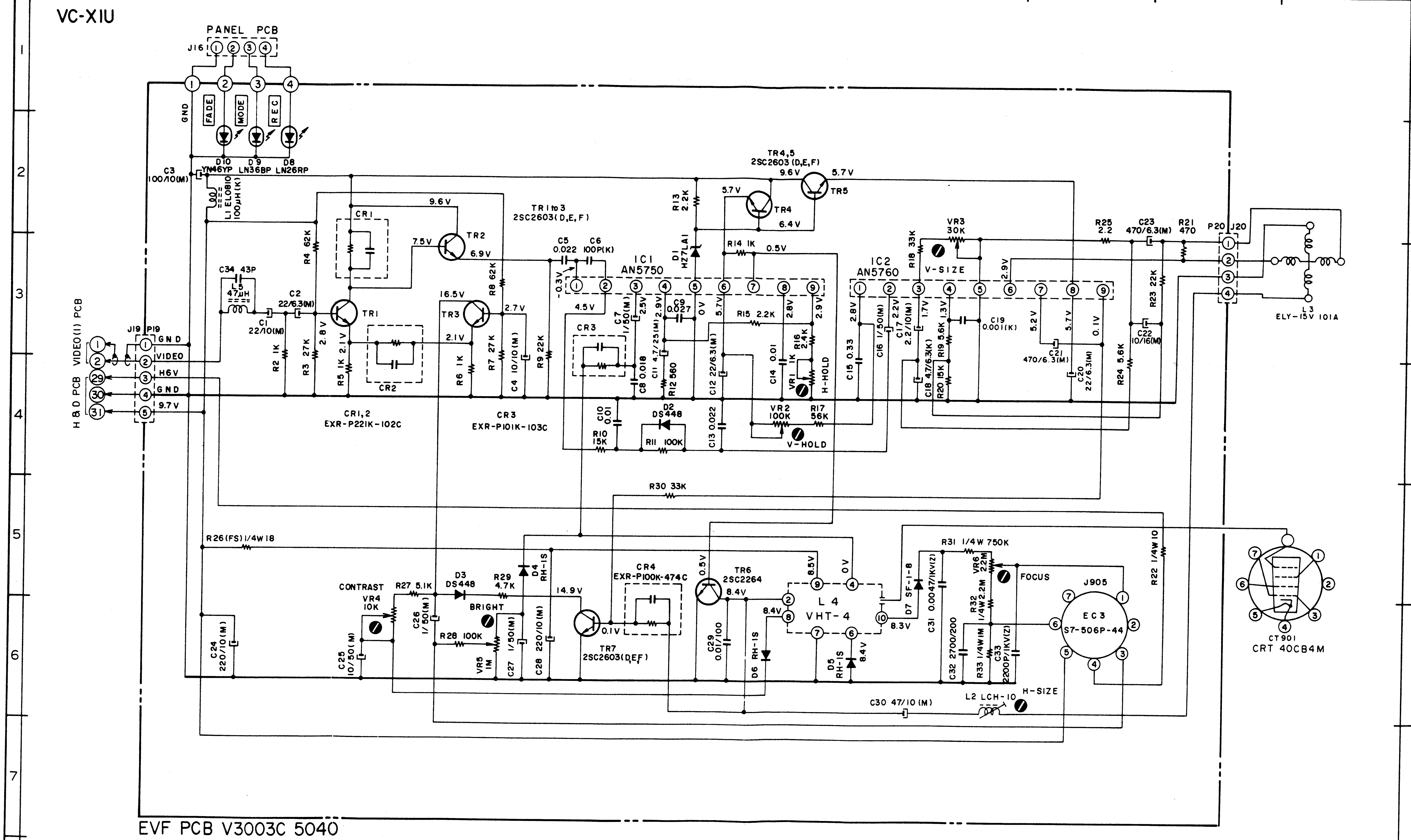
NO. 8-3 1621246A

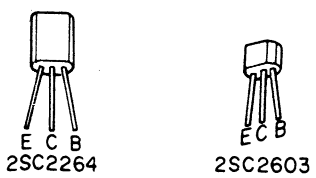
001191


VC-XIU
VIDEO PCB(2) V3003A5011
PRE AMP PCB
AW PCB
V3003A5012
VIDEO(1)PCB
H&D PCB
PANEL PCB
PANEL PCB
IC13 CA3240
IC14 TL082CP
IC15 μPC358C
IC16 NJM4556D
IC17 NJM 4556D
IC1 AN614
IC2 VC-4
IC3 μPC358C
IC4 AN608P
IC6 μPC596C
IC7 VC-4
IC8 μPC358C
IC11 VC-4
IC12 μPC358C
VR13, 14, 16 WHITE BALANCE
R-GAIN
B-GAIN
B-PHASE
R-PHASE
R-BALANCE
B-BALANCE
WIDE
TELE
POWER ZOOM MOTOR
T1609-M0819
DRIVE
DUMP
AUTO IRIS SERVO
2SA1115
2SC2603
2SC641K
2SC944S
2SC2291
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (Z)
NON POLAR CAPACITORS
PNP TRANSISTORS 2SA1115(E,F)
NPN TRANSISTORS 2SC2603(E,F)
VC-XIU VIDEO (2)
SCHEMATIC DIAGRAM
NO.8-4 1621247A
001192


VC-XIU
H&D PCB V3003B5030
EVF PCB
VIDEO(1) PCB
PRE AMP PCB
VIDEO(2) PCB
PANEL PCB
SOCKET PCB V3003B5031
DY XVC-553C
T1 VHT-5
J903 EXT MIC JACK
J902 AF CONNECTER
J901 CAMERA CONNECTER
DC POWER SUPPLY
H. LINEARITY (1)
V. SIZE
V. LINEARITY
2SA1115 2SC2603
2SA733A
2SC1312R
2SD781
2SB743
2SC2291
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50 WV (J)
VC-XIU H&D
SCHEMATIC DIAGRAM
NO. 8-5 1621248A
2C
001193C


VC-XIU
EXT REMOCON JACK
REC PCB
SW1 FADE IN KHC10014
SW2 FADE OUT KHC10014
TR3 2SA1115(D,E,F)
L1 100μH
IC2 LM2904M
AGC
IRIS (SUB)
IRIS
(NORMAL OFF)
CR2 RL-2
CR1 RL-1
MP4438
IC1
CLOCK
VR2 22K
CR3 RL-3
CR4 RL-3
CR5 RL-4
CR6 RL-5
TR1 2SA1115 (D,E,F)
TR2 2SC2603(D,E,F)
TR4 2SC2603(D,E,F)
TR5 2SC2603(D,E,F)
TR6 2SA1115(D,E,F)
TR7 2SC2603(D,E,F)
TR8 2SC641K (B,C)
NEGA POSI
WHITE BALANCE
H & D PCB
PANEL PCB V3003C5021
EVF PCB
VIDEO (2) PCB
VIDEO (2) PCB
2SA1115
2SC2603
2SC641K
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
VC-XIU PANEL
SCHEMATIC DIAGRAM
NO. 8-6 1621249A
2C
001194A




NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

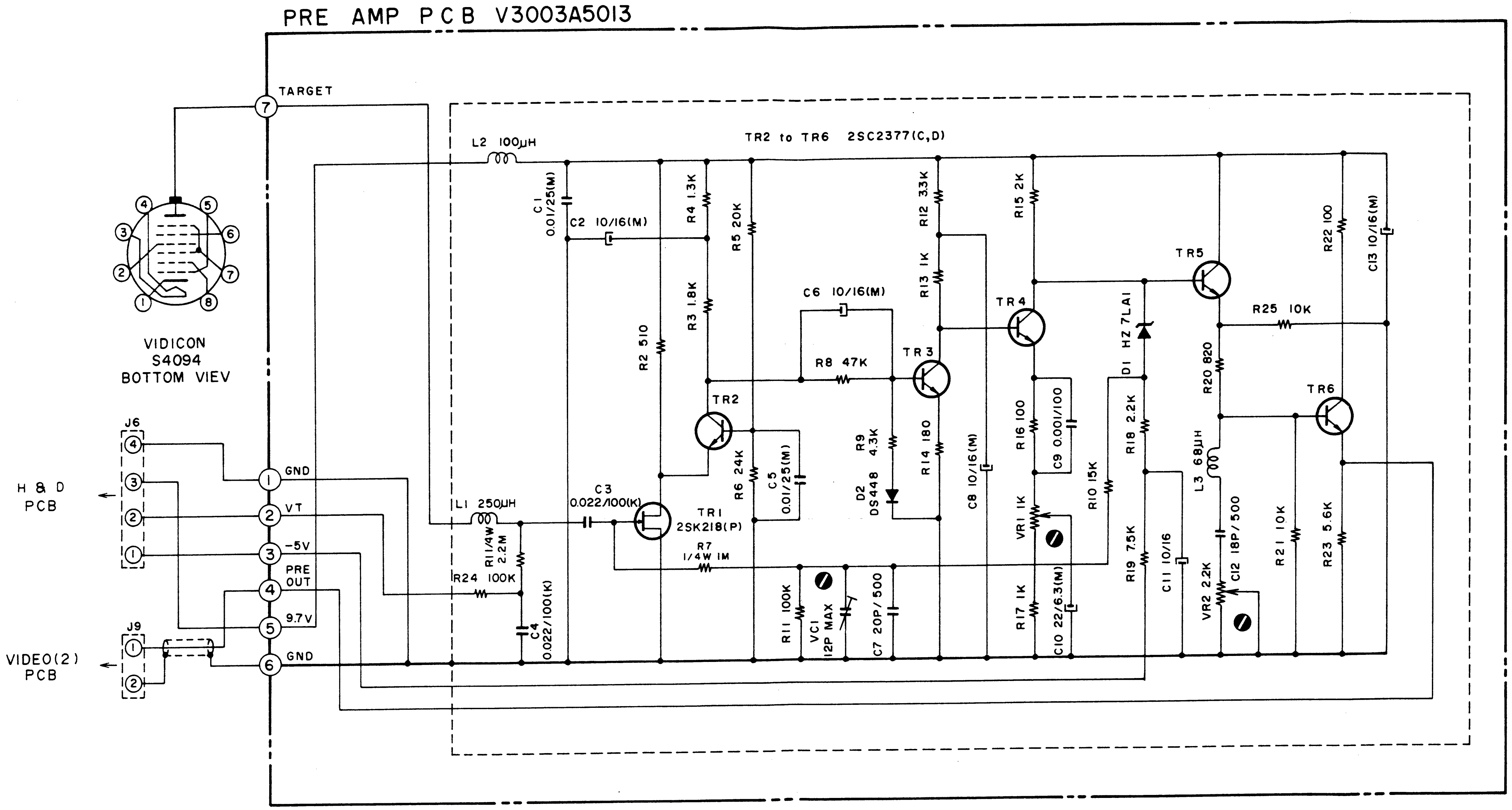
WARNING: THIS CHASSIS CONTAINS COMPONENTS CRITICAL FOR X-RADIATION SAFETY.
FOR CONTINUED X-RADIATION SAFETY PLEASE REPLACE WITH A COMPONENT OF THE SAME TYPE.

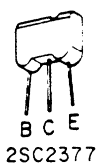
# VC-X1U EVF SCHEMATIC DIAGRAM

NO. 8-7 1621250A 2C

001195A

VC-XIU




NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN µF 50WV(J)

001196A

VC-XIU AMP
SCHEMATIC DIAGRAM
NO. 8-8 1621251A 2C